Contents

1. Functions of Food **1**

- Balanced Diet 1
- Principles of Planning a Balanced Diet 5

2. Nutrient Requirements **7**

- Nutritional Requirements during Pregnancy and Lactation 7
- Requirements of Infants and Children 15

3. Nutritional Assessment of Children **24**

- Anthropometry 24
- IAP Growth Monitoring Guidelines (2015) 27
- Body Mass Index 28
- Height/Length 39
- Weight for Height 39
- Mid Arm Circumference 40
- Head Circumference 40
- Chest Circumference 40
- Triceps Skinfold 40
- Mid Arm-Muscle Circumference 41
- Mid Parental Height 41
- Road to Health Charts 41
- Dietary Assessment 42
- Clinical Assessment 49

4. Feeding of Infants (0–6 Months) **51**

- Advantages of Breastfeeding 51
- Colostrum 53
- Factors Causing Lactational Failure 55
- Frequency and Duration of Exclusive Breastfeeding 62
- Artificial/Formula Feeding 62
- Adverse Affects of Bottle Feeding 63
- Burping after Feeding 64
- Duration of Breastfeeding 64
- Breastfeeding during Illness 65
- Some Myths and Facts Related to Breastfeeding 66
- Breastfeeding Promotion Network of India 67
- Nutrition in Low Birth Weight Babies 68
- Route of Feeding 71

5. Nutrition for Infants and Toddlers (6–24 Months) **72**

- Weaning or Complementary Feeding 72
- Time of Complementary Feeding 74
- Causes of Faulty Weaning Practices 76

- A Word of Caution 77
- When and What to Add 77
- Some Practical Aspects of Complementary Feeding 79
- Amylase-rich Factor 83
- Enriching Complementary Foods 83
- Preparation and Storage of Complementary Foods 84
- Feeding Infant and Toddlers Study (FITS 2002) 84
- Myths and Facts Related to Complementary Feeding 84
- Some Complementary Foods 86
- Other Common Household Complementary Foods 87

6. Nutrition for Older Children 89

- Building Good Food Habits 89
- Diet for the Preschool Child (2–5 years) 90
- Recommended Nutrients and Food Groups 91
- Diet for the School Children (6–12 years) 91
- What are Food Fads 92
- How to Meet the Requirements (Right Selection) 92

7. Nutrition for the Adolescents 98

- Increased Nutritional Needs 99

8. Maternal Nutrition in Pregnancy and Lactation 120

- Preconception Nutrition 120
- Nutrition during Pregnancy 121
- Micronutrients in Pregnancy 123
- Dietary and Environmental Hazards during Pregnancy 124
- Special Considerations during Pregnancy 126
- Lactation Period 127

9. Nutrition for the Athlete Child 130

- Physiological Effects of Exercise 130
- Nutritional Recommendations 131

10. Interaction of Nutrition and Infection in Children 139

- Synergism and Antagonism 140

11. Vegetarianism in Children 148

- Adequacy of Vegetarian Diets 149
- Nutritional Risks 149

12. Protein-Energy Malnutrition 156

- Causes of PEM 157
- Pathogenesis of PEM 157
- Classification of PEM 158
- Spectrum of PEM 159
- Management of PEM 161

13. Childhood Obesity 169

- Definition of Childhood Obesity 170
- What is BMI 170
- What is a BMI Percentile 170

- Pathogenesis of Childhood Obesity 172
- Assessment of Obesity 173
- Management of Childhood Obesity 174

14. Nutritional Anemia in Children 181

- Iron Deficiency Anemia 181
- Functions of Iron in the Body 182
- Clinical Features of Iron Deficiency Anemia 183
- Implications of Iron Deficiency Anemia 183
- Etiology of Iron Deficiency 185
- Treatment of IDA 186
- Prevention of Iron Deficiency 188
- Folate and B_{12} Deficiency—Megaloblastic Anemia 190

15. Nutrition in Diarrheal Diseases 196

- Risk Factors of Diarrhea in Children 196
- Interaction between Diarrheal Diseases and Malnutrition 197

16. Vitamin A Deficiency in Children 206

- Mother Deficient in Vitamin A 206
- Poor Dietary Source of Vitamin A in Children 207
- Childhood Illness and Infections 207
- Ignorance and Poverty 207
- Functions of Vitamin A 208
- Pathogenesis 209
- Deficiency Signs of Vitamin A 210
- Vitamin A Deficiency in Specific Conditions 211
- Target Group for Vitamin A Supplementation 212
- Prevention of Vitamin A Deficiency 213
- Treatment 215
- Some Controversies About Vitamin A 215

17. Zinc in Infant Nutrition 218

- Metabolism 219
- Zinc Requirements 220
- Implications of Zinc Deficiency 220
- Zinc Status in Pregnancy 220
- Zinc and Childhood Infections 221
- Zinc Toxicity 223

18. Iodine Deficiency Disorders 225

- Functions of Iodine 225
- Metabolism of Iodine 226
- Spectrum of IDD 227
- Assessment of IDD in a Community 228
- Classification of IDD 229
- Causes of IDD (Antithyroid Factors) 229
- Prevention of IDD 230
- Iodine Fortification 230
- IDD—The Indian Scenario 232
- Dietary Sources of Iodine 233

19. Role of Other Micronutrients in Children **235**

- Potassium 235
- Calcium 237
- Magnesium 239
- Vitamin D 241

20. Probiotics—Role in Child Health **245**

- Source of Probiotics 246
- Probiotics—Criteria 246
- Mechanism of Action 247
- Clinical Uses 248
- Disadvantages of Probiotics 250

21. Diet in Constipation **252**

- Idiopathic/Functional Constipation 252
- Medical Causes of Constipation 254
- Surgical Causes of Constipation 254
- Management of Constipation 254

22. Food Allergies and Intolerances **258**

- Pathogenesis 258
- Common Food Allergens 261
- Skin Manifestations of Food Allergy 261
- Respiratory Manifestation of Food Allergy 261
- Manifestations of GIT 261
- Diagnosis of Food Allergy 262
- Maintenance of Food Diary 262
- Elimination Diet 262
- Oral Food Challenges 262
- Prick Puncture Skin Testing 262
- In Vitro Testing (RAST) 263
- Oral Allergy Syndrome 263
- Chinese Restaurants Syndrome 263
- Sulfite Sensitivity 264
- Auriculotemporal Syndrome (Frey Syndrome) 264
- Heiner Syndrome 264
- Anaphylaxis 264
- Celiac Disease 264
- Allergic Eosinophilic Gastroenteritis 265
- Infantile Proctocolitis 265
- Migraine 265
- Treatment/Management 265
- Recognizing Allergies in Children 266

Index *269*