Nutrition and the World Food Problem

Nutrition and the World Food Problem

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Contents

Abbreviations and Symbols XII
List of Contributors . XIII
Preface XV
Physiological Aspects

I. Introduction 1
II. Biological and Ecological Considerations . 1
   A. Intrauterine Fetus . 1
   B. Exterogestate Fetus 2
   C. The 'Transitional' . 4
III. Critical Time Zones . 6
IV. Nutritional Status and Ecological Forces . 7
V. Nutritional Health — Its Prevalence and Assessment . 9
   A. Direct Assessment . 9
   B. Indirect Assessment . 10
   C. Assessment of Ecological Factors . 10
VI. Nutritional Health Programs 11
VII. Nutritional Health and National Development 14
VIII. Summary . 15

References 16

Nutrition, Health and Aging Donald M. Watkin, Washington, D.C.

Prologue . 20
Protein 21
Fat 23
Carbohydrate . 24
Minerals . 26
Calcium 26
Phosphorus 26

Contents VI

Fluorine 26
Magnesium . 27
Sodium 27
Potassium . 28
Iodine 28
Iron 28
Lithium 29
Zinc 29
Chromium . 30
Selenium 30
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Trace Elements</td>
<td>31</td>
</tr>
<tr>
<td>Vitamins</td>
<td>31</td>
</tr>
<tr>
<td>Fat-Soluble Vitamins</td>
<td>32</td>
</tr>
<tr>
<td>Water-Soluble Vitamins</td>
<td>35</td>
</tr>
<tr>
<td>Water</td>
<td>38</td>
</tr>
<tr>
<td>Calories</td>
<td>40</td>
</tr>
<tr>
<td>Physical Work - the Eighth Nutrient Group</td>
<td>43</td>
</tr>
<tr>
<td>Clinical Applications</td>
<td>44</td>
</tr>
<tr>
<td>Secondary Malnutrition</td>
<td>44</td>
</tr>
<tr>
<td>Recommended Dietary Allowances</td>
<td>45</td>
</tr>
<tr>
<td>Prompt Management of Acute Illnesses and Accidents</td>
<td>45</td>
</tr>
<tr>
<td>Compliance</td>
<td>46</td>
</tr>
<tr>
<td>Drug-Hormone-Nutrient Relations</td>
<td>46</td>
</tr>
<tr>
<td>Personal Responsibility: Key to Optimum Health and Nutritional Status</td>
<td>47</td>
</tr>
<tr>
<td>Education: First Line of Defense</td>
<td>48</td>
</tr>
<tr>
<td>Eating Together: Center of Gravity</td>
<td>48</td>
</tr>
<tr>
<td>Research as a Service to Mankind</td>
<td>48</td>
</tr>
<tr>
<td>Epilogue</td>
<td>50</td>
</tr>
<tr>
<td>References</td>
<td>51</td>
</tr>
<tr>
<td>Nutrition and Physical Performance</td>
<td>63</td>
</tr>
<tr>
<td>I. Introduction</td>
<td></td>
</tr>
<tr>
<td>II. Energy Stores</td>
<td>63</td>
</tr>
<tr>
<td>III. Interplay between Anaerobic and Aerobic Oxidation</td>
<td>64</td>
</tr>
<tr>
<td>IV. Maximal Oxygen Uptake</td>
<td>66</td>
</tr>
<tr>
<td>V. Fuel for Muscular Work</td>
<td>68</td>
</tr>
<tr>
<td>A. Protein</td>
<td>68</td>
</tr>
<tr>
<td>B. Carbohydrate versus Fat</td>
<td>68</td>
</tr>
<tr>
<td>C. Glycogen Stores in Muscles</td>
<td>69</td>
</tr>
<tr>
<td>VI. Diet and Glycogen Stores</td>
<td>72</td>
</tr>
<tr>
<td>VII. Optimal Supply of Nutrients</td>
<td>74</td>
</tr>
<tr>
<td>VIII. Athletes’ Diet</td>
<td>78</td>
</tr>
<tr>
<td>IX Water Balance</td>
<td>80</td>
</tr>
<tr>
<td>X. The Miracle Pill</td>
<td>81</td>
</tr>
<tr>
<td>XI. Summary</td>
<td>81</td>
</tr>
<tr>
<td>References</td>
<td>82</td>
</tr>
</tbody>
</table>

**Contents VII**

Nutrition and Behavior and Learning

J. Cravioto and Elsa R. DeLicardie, Mexico, D.F.
I. Introduction 85
A. Definition and Etiology at the Individual Level 85
B. Prevalence . 86
C. Lethality 86
II. Effects of Early Severe Malnutrition on Mental Functioning . 87
A. Problems of Evaluation of the Role of Malnutrition . 87
B. Short-Term Effects 87
C. Effects on Performance at School Age 93
III. Mechanisms of Action of Malnutrition on CNS 103
A. Direct Influence 103
B. Indirect Influences 103
IV. Early Severe Malnutrition and Risk of School Failure 105
V. Summary . 106
References 107

Nutrition during Pregnancy
A.M. Thomson, Newcastle upon Tyne, and F.E. Hytten, Harrow, Middx.
I. Introduction 112
II. Nutritional Status and Reproduction . 113
A. Dietary Evidence . 113
B. Clinical Evidence . 117
C. Nutritional Status before Pregnancy . 119
III. Nutritional Physiology during Pregnancy 122
A. Background 122
B. Weight Gain 122
C. Energy Requirements . 124
D. Nutrient Requirements 125
E. Metabolism 126
F. Homeostasis 127
IV. Summary . 129
References 130

Pathological Aspects Nutrition and Disease

C. Gopalan, New Delhi, and S. G. Srikantia, Hyderabad
I. Introduction 134
II. Deficiency Diseases 134
A. Protein Calorie Malnutrition 134
B. Anaemia 135
III. Nutrition and Trace Elements . 136
A. Zinc 137
B. Copper 138
C. Chromium 138
D. Selenium 139

IV. Nutrition and Metabolic Disorders 139
A. Diabetes 139
B. Pancreatic Calculi 141
C. Bladder Stone Diseases 141
D. Bone Disorders 143

V. Nutrition and Heart Disease 144
A. Cardiac Failure 144
B. Cardiac Fibrosis 145

VI. Nutrition and Cancer 146

VII. Nutrition and Malabsorption 147
A. Coeliac Disease 147
B. Lactose Intolerance 148

VIII. Nutrition and Dietary Toxins 149
A. Mycotoxins 149
B. Veno-Occlusive Disease 152
C. Lathyrism 153
D. Fluoride Toxicity 153

References 155

Undernutrition
Donald S. McLaren, Edinburgh

I. Definitions and Concepts 164

II. General Inanition (Starvation, Hunger, Underfeeding) 164
A. Clinical Features 165
B. Metabolism 166
C. Treatment 167

III. Protein-Energy Malnutrition (Marasmus and Kwashiorkor) 168
A. Pathogenesis 168
B. Clinical Features 169
C. Laboratory Findings 170
D. Pathology 171
E. Treatment 171
F. Prognosis 172
G. Prevention 173

IV. Essential Fatty Acid Deficiency 173

V. Vitamin Deficiencies 173
A. Vitamin A (Retinol); Night Blindness, Xerophthalmia, Keratomalacia 173
B. Thiamine (Vitamin B1); Beriberi - Childhood, Cardiac, Neural, Cerebral . 175
C. Niacin (Nicotinic Acid); Pellagra . 177
D. Riboflavin (Vitamin B2); Hyporiboflavinosis . 178
E. Pyridoxine (Vitamin B6); Deficiency, Dependency 179
F. Folic Acid (Folacin, Pteroylglutamic Acid) 180
G. Vitamin B,j (Cobalamin) . 181
H. Pantothenic Acid . 183

Contents IX

I. Biotin (Anti-Egg White Injury Factor) 183
J. Vitamin C (Ascorbic Acid); Scurvy 183
K. Vitamin D (Calciferol); Rickets and Osteomalacia 185
L. Vitamin E (Tocopherol) 186
M. Vitamin K . 187
VI. Water Depletion 187
VII. Element Deficiencies . 187
A. Pure Salt Depletion 187
B. -Disorders of Acid Base Balance 188
C. Potassium . 188
D. Calcium 188
E. Phosphate . 189
F. Magnesium . 189
G. Iron . 189
H. Iodine 190
I. Fluorine 191
J. Other Trace Elements 192
VIII. Summary .193

References 193
Overnutrition

Charlotte M. Young, Ithaca, N.Y.
I. Introduction 195
II. Caloric Overnutrition - Obesity . 195
A. Prevalence . 195
B. Measurement . 195
C. Health Implications 196
D. Complexities of the Obesities . 196
E. Etiologic Factors . 197
F. Treatment . 198
G. Prevention . 199
Contents X

Nutrition and Infection

C.E. Taylor, A.A. Kielmann and C. DeSweemer, Baltimore, Md.
I. Introduction 218

II. Effect of Infections on Nutritional Status 221
A. Influence of Infections on Protein Metabolism 222
B. Influence of Infections on Carbohydrate and Fat Metabolism . 223
C. Influence of Infections on Vitamins and Minerals . 223
D. Influence of Infections on Growth . 224
E. Summary 225

III. Effect of Malnutrition on Resistance to Infections 225
A. Influence of Protein Deficiency on Infections . 226
B. Influence of Vitamin Deficiencies on Infections . 227
C. Influence of Mineral Deficiencies on Infections 228
D. Influence of Inanition on Infections . 229
E. Summary of the Effects of Malnutrition on Resistance to Infections . 229

IV. Mechanisms by which Nutrition Influences Infections 230
A. Host Characteristics 230
B. Time Relationships 230
C. Immune Response . 231
D. Summary 236
MCH Maternal and child health MIT Massachusetts Institute of Technology (US) MJ Megajoule NFDM Non-fat dry milk NHA Nutrition-health-aging NPOA Nutrition Program for Older Americans NPU Net protein utilization NRC National Research Council (US) PAG Protein Advisory Group (UN) PCM Protein-calorie malnutrition PEM Protein-energy malnutrition PER Protein efficiency ratio PHA Phytohemagglutinin ppm Parts per million PUFA Polyunsaturated fatty acid RBV Relative biological value RDA Recommended Dietary Allowances (US) RQ Respiratory quotient SEM Standard error of mean SF Soy flour SIADH Syndrome of inappropriate secretion of ADH TB Tuberculosis TPB Tuber-plantain-breadfruit TPNH Triphosphopyridine nucleotide(reduced) UFA Unesterified fatty acid UK United Kingdom UN United Nations UNICEF UN International Children's Emergency Fund VOD Veno-occlusive disease WF Wheat flour WHO World Health Organization (UN) WISC Wechsler Intelligence Scale for Children

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Hardly a day passes by without newspapers carrying headlines on world shortages of food and on the impending famine which may ensue from such shortages, particularly in the developing regions of the world. These concerns have been increasing in intensity since the early seventies, when as a result of widespread bad weather the world food production had fallen for the first time after the Second World War. The food stocks of the United States and other exporting countries were soon depleted due to import demand. To make the
matter worse, the rise in world prices for many agricultural commodities led to
an inflation of retail prices causing severe hardship for the poorest people. This
situation triggered a great number of activities throughout the world culminating
in the World Food Conference which was convened under the United Nations
auspices in Rome at the initiation of the Secretary of State of the United States.
These events, and the publicity that accompanied them, strengthened public
awareness of the world food problem issue and galvanized world opinion which
has been instrumental in prompting international agencies and individual governments
to initiate a series of preventive measures with special emphasis on
increasing the agricultural production. Concern with the world's food supplies,
albeit laudable in its own right, tends to be often confined to the provision of
caloric needs.
Abundance of food does not necessarily assure a good nutrition. In earlier
years an undue emphasis on protein and the so-called 'protein gap', as the Joint
FAO/WHO Expert Committee on Nutrition put it, led to undesirable approaches
in the national and international efforts in the field of food and nutrition. On
the other hand, the recent scaling down of safe levels of protein has led to the
mistaken belief in some quarters that proteins are unimportant. This has led to
understandable confusion among planners. It is essential to put this matter in
proper perspective and emphasize that a great deal of malnutrition, due to
inadequate intake or quality of protein as well as to vitamin and mineral
deficiencies, still exists in the world. As it turns out, in many situations, these
deficiencies may be a result of inadequate consumption of food, being thus
unavoidably associated with caloric deficiency. This does not mean, however,
that large amounts of low quality diet is an answer. There is plenty of evidence
on hand which has demonstrated that excessive intake of nutritionally imbalanced
diet may produce serious pathological lesions, not to speak of the fact
that such a diet leads to a loss of appetite, with the obvious consequences.
Although precise statistics are lacking it is estimated that over half of
today's world population is afflicted to some degree by malnutrition. Despite
these staggering numbers, malnutrition, as Alan Berg expressed it, is not dramatically
visible. Unlike famine, which attracts public attention and usually prompts
immediate action at both national and international levels, most malnutrition
problems are unobtrusive. Although associated with more deaths and disease
than occasional famine, it lacks drama. Malnutrition, moreover, adversely affects
physical and mental development and significantly can shorten the productivity
and economic potential of men and women.
It is the purpose of this book to sensitize the student, practitioner and
policy maker to the nutritional and health aspects of the world food problem.
The scientific jargon has been kept to a minimum so that the book should appeal to any professional or an intelligent layman who has not had specialized training in nutrition. It has been written from a multidisciplinary point of view by a team of internationally recognized experts from the United States, Mexico, Great Britain, Sweden and India. Although planned as a systematic and integrated treatise, the contributors have been given maximum latitude in developing the subject matter of their chapters. A modest degree of overlap has been deliberately introduced to permit reading individual chapters separately or in any desired order.

This book is comprised of three parts. The first part treats the subject of nutrition and health, depicting the metabolic functions and requirements of nutrients in early childhood, in pregnancy and in the elderly and discussing the effect of nutrition on physical performance and on behavior and learning. The second part examines the interrelationships between nutrition and disease, covering the effects of undernutrition and overnutrition, as well as various metabolic and chronic diseases affected by nutrition. Separate chapters are devoted to the interaction of malnutrition and infection and to the oral manifestation of nutritional disorders. In the third part are discussed the origin of food habits, food faddism and cults, nutritional aspects of food processing and food-borne diseases and food safety.

This book is based in part on an earlier volume, Food, Nutrition and Health, published in the series World Review of Nutrition and Dietetics, 7 years ago. Because of the great demand for the earlier volume, which practically exhausted its supply, and the renewed interest in the subject matter universally, it was decided to publish this completely revised and updated version as a separate book. This should make the publication more accessible not just to students and teachers, but to the general public as well.

Although the book has been conceived principally as a reference tool, it could be easily adopted as a textbook. However, it has not been intended to serve merely as a source of information for the knowledge sake. More importantly, it is our hope that it will provide stimulus to researchers to explore some unresolved problems that confront us today: that it will guide policy makers in shaping economic and health policies of their nations; that it will give inspiration to students in their search for suitable careers; and last but not least that it will influence consumers to improve their nutritional status.

I am greatly indebted to the individual contributors whose competence and esprit de corps have made the task of editing relatively easy. Mrs Eva Rechcigl and Miss Karen Rechcigl rendered indispensable help during the compilation of
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of the volume

Miloslav Rechcigl, jr.