
Contents

Part 1: Scientific Evidence Linking Cancer to Diet and Nutrition . . . 1

Overview

- The Causes of Cancer: Quantitative Estimates of Avoidable Risks of Cancer in the United States Today, by Richard Doll and Richard Peto 3
- Environmental Carcinogenesis: Misconceptions and Limitations to Cancer Control, by John Higginson, M.D., and Calum S. Muir, M.B. 25
- Executive Summary from *Diet, Nutrition, and Cancer*, by the Committee on Diet, Nutrition, and Cancer of the National Academy of Sciences 34

Dietary Assessment and Epidemiologic Methods

- A Comparison of Dietary Methods in Epidemiologic Studies, by R. W. Morgan, M. Jain, A. B. Miller, N. W. Choi, V. Matthews, L. Munan, J. D. Burch, J. Feather, G. R. Howe, and A. Kelly 46
- Nutrition and Cancer, by A. B. Miller, with Gio B. Gori, Ph.D., Saxon Graham, Ph.D., Takeshi Hirayama, M.D., Michael Kunze, M.D., Bandaru S. Reddy, Ph.D., John H. Weisburger, Ph.D. 56
- Assessing the Risks of Cancer, by Peter N. Lee 63
- A Review of Validations of Dietary Assessment Methods, by Gladys Block 70
- Assessing Human Epidemiologic Data on Diet as an Etiologic Factor in Cancer Development, by James E. Enstrom, Ph.D. 83
- Understanding the Results of Epidemiologic Studies, by Gladys Block and Anne M. Hartman 91

Classic Experimental Studies

- The Genesis and Growth of Tumors: III. Effects of a High-Fat Diet, by Albert Tannenbaum, M.D. 98
- The Influence of a Hypervitaminosis on the Effect of 20-Methyl-cholanthrene on Mouse Prostate Glands Grown *in Vitro*, by Ilse Lasnitzki 106

Dietary Factors Linked to Cause and Prevention of Cancer

- Mechanisms of Chemical Carcinogenesis, by Elizabeth C. Miller, Ph.D., and James A. Miller, Ph.D. 113
- Nutrition and Cancer: Mechanisms of Genotoxic and Epigenetic Carcinogens in Nutritional Carcinogenesis, by John H. Weisburger, Ph.D., M.D., and Clara Horn, B.A., M.T. 124
- Diet and Cancer—An Overview (First of Two Parts), by Walter C. Willett, M.D., and Brian Macmahon, M.D. 138
- Diet and Cancer—An Overview (Second of Two Parts), by Walter C. Willett, M.D., and Brian Macmahon, M.D. 145

Mutagens, Carcinogens, and Tumor Promoters in Our Daily Food, by Takashi Sugimura, M.D.	153
Dietary Carcinogens and Anticarcinogens: Oxygen Radicals and Degenerative Diseases, by Bruce N. Ames	168
Diet and Breast Cancer, by Ernst L. Wynder and David P. Rose	178
Potential Risks from Low-Fat Diets, by Joseph T. Judd, June L. Kelsay, and Walter Mertz	190
Vitamins and Cancer Prevention: Issues and Dilemmas, by Vernon R. Young and Paul M. Newberne	198
Manipulation of Nutrients to Prevent Cancer, by Peter Greenwald	210
Role of Retinoids in Differentiation and Carcinogenesis, by Michael B. Sporn and Anita B. Roberts	220
Blocking the Formation of <i>N</i> -Nitroso Compounds with Ascorbic Acid <i>in Vitro</i> and <i>in Vivo</i> , by Sidney S. Mirvish	226
Cancer Prevention as a Realizable Goal, by Isaac Berenblum	231
Clinical Trials: A Recent Emphasis in the Prevention Program of the National Cancer Institute, by William D. DeWys and Peter Greenwald	234
Epidemiology: A Step Forward in the Scientific Approach to Preventing Cancer Through Chemoprevention, by Peter Greenwald	239
Carcinogens Occurring Naturally in Foods, by James A. Miller, Ph.D., and Elizabeth C. Miller, Ph.D.	245
Large-Bowel Carcinogenesis: Fecal Constituents of Populations with Diverse Incidence Rates of Colon Cancer, by Bandaru S. Reddy and Ernst L. Wynder	252
A Mutagen in the Feces of Normal Humans, by W. R. Bruce, A. J. Varghese, R. Furrer, and P. C. Land	258
Mutagens in the Feces of 3 South-African Populations at Different Levels of Risk for Colon Cancer, by Marion Ehrich, James E. Aswell, Roger L. Van Tassell, Tracy D. Wilkins, Alexander R. P. Walker, and Neville J. Richardson	264
Metabolic Epidemiology of Large Bowel Cancer: Fecal Mutagens in High- and Low-Risk Population for Colon Cancer, a Preliminary Report, by Bandaru S. Reddy, Chand Sharma, Loretta Darby, Kristina Laakso, and Ernst L. Wynder	273
Benzo(a)pyrene and Other Polynuclear Hydrocarbons in Charcoal-Broiled Meat, by W. Lijinsky and P. Shubik	284
Artificial Sweeteners and Human Bladder Cancer: Preliminary Results, by Robert N. Hoover and Patricia Hartge Strasser	286
Dietary Constituents Altering the Responses to Chemical Carcinogens, by Lee W. Wattenberg, William D. Loub, Luke K. Lam, and Jennine L. Speier	291

Recommendations for Dietary Change

Dietary Guidelines for Americans, from a hearing before a subcommittee of the Committee on Appropriations, United States Senate	296
Public Health Considerations in Reducing Cancer Risk: Interim Dietary Guidelines, by Sushma Palmer and Kulbir Bakshi	310
Nutrition and Cancer: Cause and Prevention, an American Cancer Society Special Report	316

Part 2: Epidemiologic Support for the Link Between Cancer and Diet 321

Statistics and Trends by Population and Geographic Locale

Nutrition in the United States, 1900 to 1974, by Willis A. Gortner	323
Environmental Factors and Cancer Incidence and Mortality in Different Countries, with Special Reference to Dietary Practices, by Bruce Armstrong and Richard Doll	331
The Role of Migrant Population in Studies of Selected Cancer Sites: A Review, by Janez Kmet, M.D.	344
Time Trends in Colo-Rectal Cancer Mortality in Relation to Food and Alcohol Consumption: United States, United Kingdom, Australia and New Zealand, by A. J. McMichael, J. D. Potter, and B. S. Hetzel	361
The Epidemiology of Cancer in China, by Bruce Armstrong	370
Seneca County, New York: An Area with Low Cancer Mortality Rates, by Birger Jansson, Ph.D.	376

Statistics and Trends by Cancer Site with Population Correlatives

Diet in the Etiology of Oral and Pharyngeal Cancer among Women from the Southern United States, by Deborah M. Winn, Regina G. Ziegler, Linda W. Pickle, Gloria Gridley, William J. Blot, and Robert N. Hoover	382
Nasopharyngeal Carcinoma in Chinese — Salted Fish or Inhaled Smoke? by Mimi C. Yu, John H. C. Ho, Ronald K. Ross, and Brian E. Henderson	390
Stomach Cancer Among Japanese in Hawaii, by William Haenszel, Minoru Kurihara, Mitsuo Segi, and Richard K. C. Lee	399
Developments in the Epidemiology of Stomach Cancer over the Past Decade, by William Haenszel and Pelayo Correa	415
Nutritional Factors and Etiologic Mechanisms in the Causation of Gastrointestinal Cancers, by John H. Weisburger, Ph.D., M.D.(hc), Ernst L. Wynder, M.D., with Clara L. Horn, B.A., M.T.	423
Epidemiology of Cancer of the Colon and Rectum, by Denis P. Burkitt	432

Epidemiologic and Dietary Evidence for a Specific Nutritional Predisposition to Esophageal Cancer, by Schalk J. Van Rensburg	443
Esophageal Cancer Among Black Men in Washington, D.C. I. Alcohol, Tobacco, and Other Risk Factors, by Linda M. Pottern, M.P.H., Linda E. Morris, M.P.H., William J. Blot, Ph.D., Regina G. Ziegler, Ph.D., and Joseph F. Fraumeni, Jr., M.D.	453
Esophageal Cancer Among Black Men in Washington, D.C. II. Role of Nutrition, by Regina G. Ziegler, Ph.D., Linda E. Morris, M.P.H., William J. Blot, Ph.D., Linda M. Pottern, M.P.H., Robert Hoover, M.D., and Joseph F. Fraumeni, Jr., M.D.	460
Dietary Aflatoxins and Human Liver Cancer. A Study in Swaziland, by F. G. Peers, G. A. Gilman, and C. A. Linsell	469
Coffee Drinking and Risk of Bladder Cancer, by Patricia Hartge, Robert Hoover, Dee W. West, and Joseph L. Lyon	479
Dietary Vitamin A and Risk of Cancer in the Western Electric Study, by Richard B. Shekelle, Shuguey Liu, William J. Raynor, Jr., Mark Lepper, Carol Maliza, Arthur H. Rossof, Oglesby Paul, Anne MacMillan Shryock, and Jeremiah Stamler	486
Trends in Diet and Breast Cancer Mortality in England and Wales 1928-1977, by David M. Ingram	492
Epidemiology of Prostate Cancer with Special Reference to the Role of Diet, by Takeshi Hirayama	498

Part 3: Social Marketing and Dietary Cancer Prevention 505

Introduction to Social Marketing

The Marketing of Social Causes: The First 10 Years, by Karen F. A. Fox and Philip Kotler	507
Social Marketing of Health Behavior, by Philip Kotler	517
Application of Marketing Principles to Improve Participation in Public Health Programs, by Katherine Alexander and James McCullough	522

Theories, Techniques, and Issues in Health Behavior Change

Health Behavior, Illness Behavior, and Sick Role Behavior: I. Health and Illness Behavior, by Stanislav V. Kasl, Ph.D., and Sidney Cobb, M.D.	528
Modifying and Developing Health Behavior, by Lawrence W. Green	548
Selected Behavioral Strategies for the Health Educator, by Karen King	565
Cancer Prevention Awareness Survey, from the National Cancer Institute	568

Food Habit Modification as a Public Health Measure, by M. M. Krondl, Ph.D., and D. Lau, M.Sc.	575
Nutrition Counseling in Private Practice: Attitudes and Activities of Family Physicians, by Thomas E. Kottke, Jane K. Foels, Cynthia Hill, Thomas Choi, and Douglas A. Fenderson	581
Problems and Challenges in Social Marketing, by Paul N. Bloom and William D. Novelli	587
A Critical Assessment of Marketing's Place in Preventive Health Care, by Godfrey M. Hochbaum	597
Dietary Intervention Studies Incorporating Social Marketing Techniques	
Reducing the Risk of Cardiovascular Disease: Effects of a Community-Based Campaign on Knowledge and Behavior, by Nathan Maccoby, Ph.D., John W. Farquhar, M.D., Peter D. Wood, D.Sc., and Janet Alexander, M.A.	605
Heart Healthy Eating and Exercise: Introducing and Maintaining Changes in Health Behaviors, by Thomas J. Coates, Ph.D., Robert W. Jeffery, Ph.D., and Lee Ann Slinkard	619
The Multiple Risk Factor Intervention Trial (MRFIT): III. The Model for Intervention, by Robert C. Benfari (for the MRFIT)	628
Theory and Action for Health Promotion: Illustrations from the North Karelia Project, by Alfred McAlister, Ph.D., Pekka Puska, M.D., Ph.D., Jukka T. Salonen, M.D., Ph.D., Jackko Tuomilehto, M.D., Ph.D., and Kaj Koskela, M.D., M.Pol.Sc.	643
Cancer Prevention: A Program to Inform the Public About Cancer Risk and Risk Reduction, from the Office of Cancer Communications, National Cancer Institute	652
Index	665