

Preface

Historically, as well as recently, research is showing that foods, dietary supplements, and some nutrients are important in skin cancer prevention and skin health. Within the 48 chapters of this book two major needs are fulfilled by defining the role of dietary supplements, foods, and nutrients in treatment and prevention of skin cancer and dermal damage. A major focus is on the primary causes of dermal damage: aging and solar exposure in seven focused areas of skin health promotion.

Initially broad overviews of diet and food in skin health are reviewed. Thus the role of foods found in the Mediterranean diet and probiotics are documented to affect the skin and prevent damage. In addition overview chapters are included on the effects of ultraviolet irradiation (UV) which cause significant damage and cancer in were included the skin.

The book's second section describes the role of selected nutrients in promoting skin health and preventing dermal diseases. Diet and nutrition are vital keys to controlling morbidity and mortality from chronic diseases. Thus taurine and omega 3 fatty acids can aid in ameliorating psoriasis and this is documented in reviews. In addition, antioxidant actions of vitamin C and nitric oxide produced from supplemental arginine are keys to dermal health.

Then key researchers in the third section describe the role of herbs and plant spices in skin health. Turmeric and ginger are documented to function in skin care. In addition an Indian indigenous berry and Aloe vera's roles in dermatology are described.

The fourth section has detailed reviews of selected dietary components in dermal health. Polyphenols as a group with components from grapes, chocolate, and other nutrient rich botanicals are explored as examples. Antioxidants also play roles in skin functions. Specifically, resveratrol, rice bran, and coenzyme Q10 are discussed. Antioxidants in dietary supplements and nutraceutical foods counteract some of the damaging effects of UV (ultraviolet) radiation (light) in skin and other tissues. They play key roles in preventing the development of skin cancer. UV light is clearly the major cause of skin cancers as well as aging, damaged skin. Therefore experts reviewed the roles of bioactive foods and their constituents to reduce UV-induced skin cancer and dermal damage.

The fourth section focuses on historic vitamins with well-defined effects on skin and skin cancer where new research is providing new insights. Thus folate, vitamin D, and vitamin E on skin cancer are reviewed. These are readily available agents that have multiple effects on health and frequently used as supplements.

The fifth and major section investigates research and focuses on the two major types of skin cancer: melanoma and basal cell carcinoma. Skin cancer is the most common form of cancer and dietary materials can play a key role. The U.S. National Institutes of Health report that only 18 % of adults meet the recommended intake of vegetables. Increasingly, Americans, Japanese, and Europeans are turning to the use of dietary vegetables, medicinal herbs, and their extracts or components to prevent or treat cancer. It has been known for decades that those populations with high plant consumption

have reduced risks of cancers. Therefore important foods in skin health and cancer prevention are reviewed. These include Indian foods, chocolate, green tea and its components, licorice, fruit antioxidants, mangosteen, soybeans, and polyacetylenes in carrots. In addition the multitude of complex biomolecules as dietary extracts in dietary fruits and vegetables play a crucial role in skin health maintenance. Experts review dietary supplements in general as well as specific ones including *N*-acetylcysteine, turmeric, and polyphenols in general.

The final section is extensive in its review of plants and their components in preventing and treating skin diseases. There is a huge cosmetic and skin care industry for damage that does not result in cancer. Here antioxidant dietary materials may be particularly useful in prevention or as ingredients in medications to combat solar and aging effects. Specific issues confronting older Americans include challenges of how to deal with changes in skin texture, health, and, especially, cancer. The U.S. Bureau of Census predicts that seniors are increasing dramatically and will more than double to 80 million by 2050, at which time there will be nearly 2 billion seniors worldwide. It is critical that these additional years are productive, enjoyable, and disease free. Antioxidants and their food and herbal sources should play critical roles in this process. Antioxidants in dietary vegetables and their products often have limited harmful side effects. This stands in stark contrast to many drugs that are promoted and studied for possible disease-preventive activity. A wide variety of herbs including ginger, vitamins, Indian native plant remedies, foods, including chocolate, and well-recognized herbs, including aloe vera, are reviewed by experts. Mechanisms of actions including molecular sensors and mediators in skin cancer, and insulinotropic signaling in psoriasis and atopic dermatitis are defined.

Plant extracts as dietary supplements are now a multibillion-dollar business, built upon limited research data. Common dietary vegetables and herbs and their over-the-counter extracts are readily available. Therefore this book is useful to the growing nutrition, food science, and natural product research and development community. This book focuses on the growing body of knowledge on the role of various dietary plant constituents that reduce oxidative damage as part of chronic disease. Expert reviews define and support the actions of bioflavonoids, antioxidant vitamins, and similar materials that are part of dietary vegetables, dietary supplements, herbs, and nutraceuticals.

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