
Preface

The Strategic Plan of the United States' National Institute of Health stresses the pursuit of mechanistic studies as an overarching priority. Among the basic mechanisms identified as needing exploration are immune-focused studies. Many dietary components are believed to exert their activities by modulating immune function. These are highly sought by patients in the absence of an effective standard pharmaceutical therapy. Numerous botanical extracts as well as high dose vitamin supplements are used by the public with the expectation that they will boost and/or modulate immune responses. As the number of seniors grows interest in their loss of immune defenses (immunosenescence) increases and is linked to longevity or lack thereof. The desire to maintain wellness by preventing and treating infectious diseases are among the key reasons for responses. Normal functioning of the immune system is critical to health. One new tumor cell appears about every day and is eliminated by the immune system. Aging, stress, diseases like AIDS, autoimmune reactions, chemical treatments to suppress immune responses in arthritis, and transplants can facilitate the survival of a cancer, leading to clinical disease. Can dietary modulation thereafter help treat cancer? Putative immune-modulating agents and practices are also being used with the belief that they will maintain wellness by reversing the immune decline-associated aging and the immunosuppression associated with cancer, its treatment, and with HIV/AIDS. Thus, an increased focus on understanding the efficacy of botanicals and other dietary supplements on immune function is warranted.

This book focuses on dietary modalities that modulate immune function. The first section discusses various nutrients that alter innate and/or adaptive immunity humoral and cellular responses affecting both immune mechanisms and disease endpoints. The second section investigates the role of nutraceuticals in immune-mediated cancer resistance. The third one investigates their role in asthma and allergy. The fourth segment reviews the role of botanical extracts and supplements in enhancing responses to pathogens, which should have significant public health value. Indeed, the usage of foods and their extracts as therapeutic tools appear in ancient and modern cultures. Thus, the first set of reviews investigates bioactive foods in immunodeficiency diseases. The next section looks at the role of nonpathogenic bacteria, prebiotics, and probiotics in immune modulation. Finally, the authors review dietary supplements in viral diseases. Historically, famine preceded disease and likely was treated by dietary therapy of the immunodeficiency due to dietary insufficiency.

Clearly, information is vital for the researcher, physician, and particularly the lay public as they are exposed to increased availability and media evidence that they may have efficacy. Importantly, in the USA the use of botanicals and their extracts are widely available, part of a 20 billion dollar business. The majority of seniors use dietary supplements and nutrients to promote health. How effective are these agents in doing so via

immune restoration or regulation? Therefore, information from scientific research is critical to help people make decisions on their benefits, risks, or value in the prevention and treatment of immune dysfunction with loss of resistance.

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<http://www.springer.com/978-1-60761-060-1>

Dietary Components and Immune Function
Watson, R.R.; Zibadi, S.; Preedy, V.R. (Eds.)
2010, XXVII, 350 p. 55 illus., Hardcover
ISBN: 978-1-60761-060-1
A product of Humana Press