

Abstract

Am J Clin Nutr. 2000 Jun;71(6 Suppl):1720S-5S; discussion 1726S-7S.

Use of T cell function to determine the effect of physiologically active food components.

Field CJ.

Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada.

BACKGROUND: The interdependency between the disciplines of nutrition and immunology was recognized in the 1970s when immunologic measures were introduced as a component of assessing nutritional status. Today, the immune response is considered integral to the pathophysiology of many chronic diseases in which diet plays a major role in prevention or treatment.

DISCUSSION AND FINDINGS: T lymphocytes are an important adaptive cellular component of the immune system. Because of the difficulty in quantifying and isolating T cell function through clinical measures and in vivo immune challenges, most assessments of the effect of nutrition on immunity have been performed in vitro. A frequently used in vitro method to assess the cell-mediated response to nutritional intervention is lymphocyte blastogenesis. During the past 20 y, many soluble factors (cytokines) that influence cells involved in the immune and inflammatory responses have been described. Changes in dietary fat can modulate cytokine production in the absence of disease. Apoptosis (programmed cell death) is an exciting new area; a decrease in the rate of apoptosis may play a role in the pathogenesis of autoimmune disease and age-related events such as tumorigenesis. Energy restriction increases apoptosis.

CONCLUSIONS: The goal of studying biomarkers of immune function is to understand how specific nutrients or foods directly and indirectly affect immunity. Biomarkers must be identified that can predict with reasonable accuracy resistance to infection and other illnesses associated with poor immune function.

PMID: 10837328

