Van Buren CT,
Kulkarni AD,
Rudolph FB
Division of Immunology and Organ Transplantation, University of Texas School of Medicine, Houston 77030.
The Journal of Nutrition[1994, 124(1 Suppl):160S-164S]
Type: Clinical Trial, Controlled Clinical Trial, Journal Article, Review

Abstract
Dietary nucleotides, found in normal diets, have been recently determined to be required for normal immune defenses. Rejection of cardiac transplants, graft-vs.-host disease, and delayed cutaneous hypersensitivity in animal models are all suppressed by a diet deficient in nucleotides. T lymphocytes seem to require dietary nucleotides for normal maturation and function. Host resistance to bacterial and fungal infections is decreased in mice on nucleotide free diets; addition of RNA or uracil prevents this vulnerability to infection. Dietary RNA is required to restore lost immune function after protein deprivation. Adequate calories and protein alone do not return immune function to normal. Dietary nucleotides can restore lost immune function even during protein starvation and weight loss. Because all parenteral and most enteral nutrient solutions are nucleotide free, clinical studies were undertaken comparing a new nucleotide containing diet to a standard high protein enteral feeding. In two separate double blind clinical studies the patients fed the enteral diet containing nucleotides had improved immune function compared with patients receiving a nucleotide free diet. In addition, infectious complications and length of hospital stay were reduced in postoperative cancer patients fed Impact compared with a control group.