

Nutrients Involved in Immune Function

Immune Function	Key Nutrients
Maintaining physical barrier integrity (skin, gut, and respiratory tract)	Vitamins A, B6, B9 (folate), B12, C, D, E; iron, zinc
Oxidative burst (to kill pathogens and for immune cell self-protection)	Vitamin C, E; copper, iron, magnesium, selenium, zinc
Innate immune cell proliferation, differentiation, function, and movement	Vitamins A, B6, B12, C, D, E, folate; copper, iron, magnesium, selenium, zinc
Antimicrobial activity (complement, interferons, cathelicidin)	Vitamins A, C, D; copper, iron, selenium, zinc
Regulation of inflammation (triggered by innate immune cells, pro-inflammatory cytokines)	Vitamins A, B6, C, E; copper, iron, magnesium, selenium, zinc
T cell proliferation, differentiation, and function	Vitamins A, B6, B12, C, D, E; copper, iron, selenium, zinc
T-cell inhibitory actions; including Treg function and reduction of autoimmunity risk	Vitamins B6, D, E
Antibody production and function (TH2, B-cells, antibodies)	Vitamins A, B6, B12, C, D, E, folate; copper, magnesium, selenium, zinc
Cell-mediated immunity [TH1, antigen-presenting cells (dendritic cells, macrophages, B-cells), T-cells]	Vitamins A, B6, B12, C, D, E, folate; copper, iron, selenium, zinc

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