COLORADO STATE UNIVERSITY EXTENSION

Supporting the Immune System

The Importance of a Balanced Dietary Pattern

The immune system is a complex set of cells that work together to defend the body from foreign pathogens.

- All cells require all nutrients, including vitamins, minerals and adequate protein and calories.
- Immune cells are highly active, and rely especially upon a balanced diet filled with these nutrients.
- The Dietary Guidelines for Americans recommends consuming a diet full of fruits, vegetables, legumes, whole grains, low-fat dairy, lean protein sources, and healthy fats.

Certain nutrients have a big impact on immune function, including Vitamins A, C, D, E, zinc and probiotics:

Vitamin A

Food Sources*	RDA**	Upper Limit***
Carrots, kale, dairy products, fatty fish	Males: 900 micrograms Females: 700 micrograms	3,000 micrograms

Vitamin C

Food Sources*	RDA**	Upper Limit***
Oranges, colored bell peppers, strawberries	Males: 90 milligrams Females: 75 milligrams	2,000 milligrams

Vitamin D

Food Sources*	RDA**	Upper Limit***
Fortified milk/dairy products and cereals, fatty fish	Males: 15 micrograms Females: 15 micrograms	50 micrograms

Vitamin E

Food Sources*	RDA**	Upper Limit***
Nuts, seeds, healthy oils, spinach	Males: 15 milligrams Females: 15 milligrams	1,000 milligrams

Zinc

Food Sources*	RDA**	Upper Limit***
Oysters, pumpkin seeds, fortified grains	Males: 11 milligrams Female: 8 milligrams	40 milligrams

Probiotics

Food Sources*	
Fermented vegetables, yogurt, kombucha	No RDA or Upper Limit for probiotic supplements, focus on food sources first

*Represents just a few examples of foods high in the specific nutrient

**Recommended Dietary Allowance for adults 19 years+

***Tolerable Upper Intake Level for adults 19 years+

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