Vegetarian Nutrition and Immune Health

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An important part of the adaptive immune system is the gut microbiome which consists of the bacteria that live in your digestive tract. The foods you eat can affect these bacteria and studies show that people following vegetarian or vegan diets have different types or quantities of gut bacteria than those who eat meat. This may be due to differences in fiber intake. Vegetarian diets are often high in fiber which comes only from plant foods.

Vegetarian Diets and the Immune System

Good nutrition is important for a healthy immune system and several nutrients in particular help it function properly. These are fiber, the omega-3 fatty acid alpha lipoic acid (ALA), zinc, magnesium, iron, folate, and vitamins A, B6, B12, C, D, and E. While meeting recommended intakes of these nutrients is important, consuming higher amounts doesn’t seem to provide additional benefits to the immune system.

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Intakes of vitamins B12 and D, zinc, and some omega-3 fatty acids including eicosapentanoic acid (EPA) and docosahexaenoic acid (DHA) are lower in vegetarians and vegans than nonvegetarians in some studies. While iron intake of vegetarians and vegans is usually comparable to or higher than nonvegetarians, studies have found that iron stores may be lower because the type of iron found in plant foods is not as accessible to the body.

### Role of Nutrients in the Immune System

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RDN Resources for Consumers:

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### Vitamin E

| 15 mg | Supports healthy skin and immune cell activity. |

### Vitamin D

| 15 mcg (600 IU) | Helps many different types of immune cells grow and develop properly. |

### Iron

| 11 mg/18mg | Supports immune cell function and aids in chemical signaling between immune cells for optimal communication. |

### Alpha-linolenic Acid

| 1.6g/1.1g | Is a component of the membranes of immune cells. Helps manage inflammatory responses in the body. |

### Fiber

| 25g | When fermented by gut bacteria, has been shown to decrease inflammatory markers in the body. Plays a role in gut health and immune support throughout the body. |

### Nuts and Seeds

- Sunflower seed kernels
- Almonds
- Hazelnuts
- Peanuts
- pecans
- Peanut butter

### Fruit and Vegetables

- Avocado
- Tomato sauce
- Wheat germ oil
- Sunflower oil
- Safflower oil

### Nuts and Seeds

- Hemp seeds
- Pumpkin seeds
- Pine nuts
- Cashews
- Sunflower seeds

### Legumes

- Soybeans
- Tofu
- Lentils
- Black beans
- Chickpeas

### Other Foods

- Fortified Cereal
- Blackstrap molasses
- Dark chocolate

### Seeds and oils

- Flaxseed oil
- Chia seeds

### Grains and Legumes

- Amaranth
- Tofu
- White beans (cooked)
- Lentils (cooked)
- Fruits and Vegetables
- Prune juice
- Potato, with skin (baked)

### Fruits

- Prune juice
- Potato, with skin (baked)

### Vegetables/Beans

- Kidney beans
- Split peas
- Lentils
- Peas, green
- Carrots
- Kale
- Spinach, cooked

### Grains

- Brown rice
- Whole-wheat bread
- Oatmeal
- Shredded wheat

### Nuts

- Almonds
- Walnuts

### Example of an Immune System-Supporting Vegetarian Menu

#### Breakfast

**Overnight Oats**
- ½ cup rolled oats
- 1 cup fortified soy milk
- ½ cup strawberries
- 1 tbsp chia seeds
- 1 tbsp hemp seeds
- ½ cup hummus

1 cup of vitamin D fortified orange juice

#### Snack

**Raw veggies with hummus**
- ½ cup sliced bell pepper
- ½ cup sliced carrots
- ½ cup hummus

#### Lunch

**Vegetable Wrap**
- 1 whole-grain tortilla
- ¼ cup guacamole
- ½-1 cup leafy greens (kale, spinach, etc)
- 4oz tempeh
- ½ tomato, sliced
- ½-1 cup sprouts

**Side of fruit**
- Ex: 1 banana, 1 orange, 1 cup grapes

#### Snack

**Yogurt with chopped nuts and dried fruit**
- 5oz yogurt
- 1 oz chopped nuts
- ¼ cup dried fruit

#### Dinner

**Chickpea Sweet Potato Curry with brown rice**
- ½ cup chickpeas
- ½ cup diced tomatoes
- ½ cup coconut milk
- ¼ cup sweet potato
- ¼ cup carrots
- ¼ cup broccoli
- 1 cup spinach
- ½ brown rice

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A registered dietitian nutritionist can help you develop a healthy vegetarian or vegan eating plan that meets your needs. To find an RDN in your area, visit [https://findanrd.eatright.org/](https://findanrd.eatright.org/). ©2021 by VN DPG. RD Resources are a project of the Vegetarian Nutrition Dietetic Practice Group. More topics available at [www.VNDPG.org](http://www.VNDPG.org).

Written by: Ginger Hultin, MS, RDN. Reviewed by: Virginia Messina, MPH, RD and Reed Mangels, PhD, RD. Expires June 2026.