



Vegetarian Nutrition

a dietetic practice group of the



Academy of Nutrition and Dietetics

RD Resources for Consumers:

Zinc in Vegetarian Diets

Background on Zinc

Zinc is an important mineral for maintaining a healthy immune system and mental alertness, healing wounds, and proper growth in children.

Because zinc is not stored in the body to any practical extent, it is important to get enough from the diet on a daily basis. There is no laboratory test for mild zinc deficiency. Instead, health professionals must consider a variety of factors including diet and deficiency symptoms.

Food Sources of Zinc

The Recommended Dietary Allowance (RDA) for zinc is 11 mg for men and 8 mg for women. The Daily Value, found on food labels, is based on 15 mg. Most American adults have adequate zinc intakes, although older adults living in poverty sometimes do not.

A wide variety of foods contain zinc and good sources usually have 1-2 mg per serving. Oysters contain more than any other food (74 mg/serving), but red meat and poultry provide the majority of zinc in the American diet. Other food sources high in zinc include beans, nuts, whole grains, fortified breakfast cereals, and dairy products (see the table of zinc amounts in foods).

Zinc in Vegetarian Diets

Phytate (phytic acid) is common in plant foods and can reduce zinc absorption by attaching to zinc in the digestive system and preventing absorption. This could be a problem for vegetarians who get their zinc from high-phytate sources such as whole grains, legumes, nuts and seeds. People with high-phytate diets might have zinc requirements up to 50% higher than the normal population.

Soaking and sprouting beans, grains, and seeds, and using grain products that rise (for example, bread instead of crackers) reduces phytate. Although zinc is absorbed at a lower rate from whole wheat bread than white bread, the higher amount of zinc in whole wheat bread is enough to overcome the lower absorption and results in a greater amount of zinc absorbed.

Most vegetarians in developed countries who are not impoverished should have adequate zinc status. However, if a vegetarian is showing symptoms of zinc deficiency (impaired growth in children, loss of appetite, and impaired immunity are symptoms of less severe deficiency; weight loss, delayed wound healing, taste and smell abnormalities, and mental fatigue are other symptoms), his/her diet should be assessed and zinc intake should be increased to 150% of the RDA. This might require a modest supplement.

Zinc citrate and zinc gluconate are the most reliable forms of zinc supplements. Avoid taking a supplement of more than the upper tolerable intake level (UL) of 40 mg per day as that can prevent absorption of copper.

Pregnancy, Infants, and Children

Zinc deficiency does not appear to be common among vegetarian or vegan children in industrialized countries today. The zinc bioavailability from soy formulas is significantly lower than from milk-based formulas, so getting 150% of the Dietary Reference Intake for infants on soy formula is prudent.

Zinc Content of Common Foods

Legumes

Tofurky Italian Sausage, 1 sausage **9mg**

Hummus, ½ cup **2.3mg**

Tofu, ½ cup firm, raw **2.0mg**

Chickpeas, ½ cup cooked **1.3mg**

Lentils, ½ cup cooked **1.3mg**

Edamame, ½ cup cooked **1.1mg**

Green peas, ½ cup cooked **1mg**

Black beans, ½ cup cooked **1mg**

Peanut butter, 2 tablespoons **.9mg**

Refried pinto beans, ½ cup cooked **.9mg**

Tempeh, ½ cup cooked **.8mg**

Miso, 1 tablespoon **.4mg**

Vegetables

Mushrooms, ½ cup cooked **.7mg**

Spinach, ½ cup cooked **.7mg**

Broccoli, ½ cup cooked **.4mg**

Kale, ½ cup cooked **.2mg**

Grains

Total, ¾ cup **15mg**

Wheaties, ¾ cup **7.5mg**

Wheat germ cereal, ¼ cup **4.7mg**

Rice Chex, 1 cup **3.8mg**

Oatmeal, 1 cup cooked **2.3mg**

Corn, 1 cup **.9mg**

Whole-wheat bread, 1 slice **.6mg**

Nuts & Seeds

Pumpkin seeds, ¼ cup roasted **2.3mg**

Cashews, ¼ cup dry roasted **1.9mg**

Sunflower seeds, ¼ cup dry roasted **1.7mg**

Almonds, ¼ cup dry roasted **1.1mg**

Walnuts, ¼ cup chopped **.9mg**

Nutritional Yeast, 1 tablespoon **2mg**

Zinc: Fact Sheet for Health Professionals. National Institutes of Health. Office of Dietary Supplements. Rev June 05, 2013.
<http://ods.od.nih.gov/factsheets/Zinc-HealthProfessional/#en2>

Breast milk provides sufficient zinc (2 mg/day) for the first 4–6 months of life but does not provide recommended amounts of zinc for infants aged 7–12 months, who need 3 mg/day. Thus, foods with zinc (fortified or natural) should be introduced at 7 months.

Vegetarian children who grow slowly should be assessed for zinc intake and status. The recommended dose for a zinc supplement is 5 mg/day for children aged 6–36 months and 10 mg/day for older children.

Summary

It's important for vegetarians to make an effort to include foods high in zinc on a daily basis. If a vegetarian develops signs of zinc deficiency, a modest zinc supplement to reach 150% of the RDA should be chosen to see if it improves symptoms. A Registered Dietitian Nutritionist or other health professional may be consulted.