



## Vegetarian Nutrition

a dietetic practice group of the



Academy of Nutrition and Dietetics

### RD Resources for Consumers:

# Meeting Calcium Recommendations on a Vegan Diet

## Food Sources of Calcium for Vegans

There are many plant-based sources of calcium, including certain leafy green vegetables, broccoli, tofu, tempeh, tahini, almonds, black beans, vegetarian baked beans, oranges, seeds, and blackstrap molasses. Vegans can also choose calcium-fortified foods like fruit juices, energy bars, and plant milks.

The calcium content of foods varies by brand and depends on processing. For example, tofu is an excellent source of calcium when a calcium salt (e.g. calcium sulfate) is used to coagulate or “set” the tofu. Likewise, while blackstrap molasses is a good source of calcium, regular molasses is not.

## Factors Affecting Calcium Absorption

Oxalates, compounds found in some leafy green vegetables, can inhibit absorption of calcium. Beet greens, Swiss chard, rhubarb, and spinach are high in calcium but also high in oxalates. Therefore, they should not be relied upon for meeting calcium needs. The calcium in other leafy greens, such as collards, kale, and mustard greens, is very well absorbed.

Vegans who consume a higher protein diet may also reduce their risk for bone fracture. Meat analogues and legumes have been shown to have a protective effect on bones. Other higher protein plant foods like beans and soy foods contain important amino acids for bone health.

## Sample Menu Providing 1000 mg of Calcium

### Breakfast

- ½ sesame seed bagel (80mg) with 2 Tablespoons almond butter (80mg)
- 1 navel orange (80mg)
- 8 oz calcium-fortified almond milk (450mg)

### Lunch

- 2 slices whole wheat bread (100mg), ¼ cup hummus (15mg), 2 slices tomato (5mg) and ¼ cup sliced cucumber (5mg)
- Banana (5mg)

### Snack

- Apple (10mg) with 2 Tbsp peanut butter (20mg)

### Dinner

- Stir fried vegetables: ½ cup tempeh (90mg), ½ cup broccoli (30mg), ½ cup carrots (20mg)
- 1 Tbsp sesame seeds (90mg)
- 1 cup brown rice (5mg)

### Snack

- ½ cup frozen non-dairy dessert (0mg) with 1 cup sliced peaches (10mg)

tip

A registered dietitian nutritionist can help you develop a healthy vegetarian eating plan that meets your needs. To find an RDN in your area, visit <https://vegetariannutrition.net/find-a-registered-dietitian/>

## Plant Sources of Calcium: Approximate Amounts

### 300 mg of calcium

Fortified plant milk, 8 oz  
Fortified orange juice, 8 oz  
Fortified energy bar

### 200 mg of calcium

Collard greens, kale, mustard or turnip greens, 1 cup cooked  
Tofu, calcium-set, ½ cup  
Blackstrap molasses, 1 Tbsp

### 100 mg of calcium

Soybeans, ½ cup cooked  
Soy nuts, ½ cup  
Instant oatmeal, 1 packet  
Almond butter or tahini, 2 Tbsp  
Bok choy, 1 cup cooked  
Edamame, 1 cup cooked  
Tempeh, ½ cup

### 75 mg of calcium

Dried figs, 5  
Textured vegetable protein, ½ cup prepared  
Chia seeds, 1 Tbsp

### 50 mg of calcium

Broccoli, 1 cup cooked  
Navy beans, cooked, ½ cup  
Vegetarian baked beans, ½ cup  
Navel orange  
Almonds, 2 Tbsp raw  
Flax seeds, ground, 3 Tbsp

See USDA's Nutrient Database for Standard Reference <https://ndb.nal.usda.gov/ndb/search/list/> for more information on calcium content of foods.

The calcium in non-dairy milk alternatives made from soy, almonds, rice, peas, cashews, oats, and hempseeds is also well absorbed. Shake the container well before using it as the calcium often settles.

## Calcium Needs of Vegans

Bone strength and individual calcium requirements are influenced by a variety of factors, such as lifestyle behaviors, cultural influences, and genetics. The overall diet can affect calcium needs as well, as certain foods can inhibit or boost calcium absorption. High sodium intake, alcohol, and smoking can be harmful to bone health.

Vegans have the same calcium requirements as omnivores. It is important for everyone to meet the recommended intake of 1000 mg/day for individuals ages 19 to 50 years and 1200 mg/day for those over the age of 50. There is very little research on the long-term bone health of vegans, but studies suggest that vegans who have low calcium intakes are more likely to have higher fracture risk.

Calcium is not the only important nutrient for bone health. Some evidence shows that vegetarians who eat more protein-rich foods like legumes, soy, and

meat analogues, have healthier bones. Vitamin D is also essential. It is primarily made by the skin through sun exposure but can also be found in some calcium-rich fortified foods, like certain plant milks.

## Getting Calcium from Plant Foods Is Good for Your Bones

Plant sources of calcium offer other nutrients that are important for maintaining strong bones. All fruits and vegetables contain potassium and vitamin C, while calcium-rich leafy green vegetables are also abundant in vitamin K. For these reasons, diets high in fruits and vegetables are important for keeping bones healthy. If consuming juice, choose 100% fruit juice with added calcium.

## Resources

Calcium: Fact Sheet for Health Professionals. National Institutes of Health. Office Dietary Supplements. Rev Sept 26, 2018. <https://ods.od.nih.gov/factsheets/Calcium-HealthProfessional/>

Melina V, Craig W, Levin, S. Position of the Academy of Nutrition and Dietetics: Vegetarian Diets. J Acad Nutr Diet. 2016 Dec; 116(12):1970-1980.