

# Nutrition Needs for Older Adults: Calcium

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## Introduction

Calcium is a mineral that plays an important role in the health of older adults. Over 99% of calcium found in the body is stored in the bones and teeth. Calcium plays a vital role in keeping the bones healthy and has a role in muscle function, nerve transmission, and hormone secretion<sup>1</sup>.

Many older adults fail to consume adequate amounts of calcium. It's estimated that over two-thirds of older adults are at risk for inadequacy of calcium<sup>2</sup>. Additionally, the amount of calcium the body absorbs decreases as adults age<sup>1</sup>.

Some compounds, such as oxalic acid, further interfere with how well calcium is absorbed. Foods high in oxalic acid include spinach, collard greens, sweet potatoes, and beans<sup>1</sup>.

## How Much is Needed?

Older adults have higher calcium needs than younger adults. Needs among older women increase sooner than for men.

It's important to get the right amount of calcium. Too little can cause a condition known as hypocalcemia, weak bones, and increased risk of bone fractures. Too much can cause a condition known as hypercalcemia, kidney damage, and kidney stones<sup>1</sup>.

The tolerable upper limit level (UL) for adults ages 51 years and older is 2,000 milligrams (mg)<sup>2</sup>. Toxic effects of calcium are most frequently caused by excessive supplementation.

### Recommended Dietary Allowances (RDA) for Calcium<sup>1</sup>:

Life Stage Group	Men	Women
19-50 years	1,000 mg	1,000 mg
51-70 years	1,000 mg	1,200 mg
71+ years	1,200 mg	1,200 mg

## Food Sources of Calcium

Calcium is found naturally in dairy products, foods fortified with calcium, and some vegetables.

### Food Sources of Calcium<sup>4</sup>:

Food source	Amount per serving	mg per serving
Yogurt (plain)	8 ounces	415
Mozzarella cheese	1.5 ounces	333
Milk (nonfat)	8 ounces	299
Fortified soy milk	8 ounces	299
Fortified orange juice	8 ounces	261
Fortified cereal	1 cup	100+
Turnip greens (cooked)	1 cup	197
Almonds	0.3 cup	152
Kale (cooked)	1 cup	94
Bok choy	1 cup	74
Kale (raw)	1 cup	24
Broccoli (raw)	0.5 cup	21

Older adults who do not consume dairy may have a more difficult time getting the calcium they need. Some individuals with lactose intolerance can consume dairy in small amounts or can tolerate dairy when taking a lactase enzyme supplement<sup>1</sup>. Those who do not consume dairy should be mindful to consume vegetables with calcium and food and beverages fortified with calcium (e.g., fortified cereal, milk alternatives, orange juice).

Some older adults are not able to get adequate calcium through food alone. Supplementation may be needed through a multivitamin or single vitamin supplement. It is important that older adults work with their health care team to determine whether supplementation is needed.

## Strategies to Help Older Adults Optimize Intake Daily

The following strategies can help older adults optimize their intake of calcium:

### When Shopping:

- Purchase foods naturally high in calcium, like dairy products, kale, bok choy, and broccoli
- Look for food items fortified with calcium, like beverages and cereals
- Read food labels for calcium content

### During Meal Preparation:

- Breakfast is a good opportunity for high calcium foods, from cereal to milk
- Prepare cooked vegetables high in calcium (e.g., kale, bok choy, and broccoli)

### At the Table:

- Offer beverages with calcium, such as milk or fortified orange juice
- Include dairy for snacks, such as cottage cheese, yogurt, and cheese

### TAKE HOME MESSAGE:

**Calcium is an important nutrient for older adults. Older adults who do not consume dairy should be mindful to eat a variety of other food sources high in calcium.**

#### REFERENCES

1. Institute of Medicine, Food and Nutrition Board. Dietary Reference Intakes for Calcium and Vitamin D. Washington, DC: National Academy Press, 2011. <https://www.nap.edu/read/13050/chapter/5>. Accessed November 19, 2019.
2. ter Borg S, Verlaan S, Hemsworth J, et al. Micronutrient intakes and potential inadequacies of community-dwelling older adults: a systematic review. *British Journal of Nutrition*. 2015 Apr; 113(8):195-206.
3. Dietary Reference Intakes (DRIs): Tolerable Upper Intake Levels, Vitamins. National Institutes of Health website. <https://www.ncbi.nlm.nih.gov/books/NBK56068/table/summarytables.t7/?report=objectonly>. Accessed November 19, 2019.
4. FoodData Central. U.S. Department of Agriculture website. <https://fdc.nal.usda.gov/>. Accessed November 19, 2019.