



# CALCIUM

## An Essential Mineral

### CALCIUM BASICS

Calcium is the most abundant mineral in the body and is integral in vascular and muscle function, nerve transmission, cellular signaling and hormonal secretion.<sup>1</sup> However, only about 1% of the body's calcium stores are used for these important functions.<sup>1</sup> The remaining 99% of the body's calcium is stored in bones and teeth to help maintain their structural support and strength<sup>1</sup> and to provide reserves to maintain levels in the blood, muscles and intracellular fluid. In addition to vitamin D, which helps improve calcium absorption<sup>2</sup>, there are other key nutrients that play a role in overall bone metabolism, including magnesium, vitamin K and phosphorus.<sup>1</sup>

### DIETARY CALCIUM RECOMMENDATIONS

Until 2010, the Food and Nutrition Board did not have adequate information for a Recommended Dietary Allowance (RDA) for calcium. However, in 2010, new guidance and dietary recommendations were published for calcium and vitamin D. The body of scientific literature for both nutrients was reassessed and RDA values were determined, rather than the Adequate Intake (AI) values, which were previously in place.<sup>1</sup>

The table below outlines the Recommended Dietary Allowance for calcium:

AGE	MALE	FEMALE	LACTATION
1-3 years	700 mg	700 mg	
4-8 years	1,000 mg	1,000 mg	
9-13 years	1,300 mg	1,300 mg	
14-18 years	1,300 mg	1,300 mg	1,300 mg
19-30 years	1,000 mg	1,000 mg	1,000 mg
31-50 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<sup>4</sup>

It is important to promote the inclusion of calcium-rich foods in the diet to help individuals achieve their recommendations. While calcium in the diet is primarily found in dairy products and green leafy vegetables, nationally representative data reveals that many Americans are not consuming enough calcium through their diets alone. Specifically, many adolescents and teenagers (ages 9-18), women (ages 51-70), and both men and women (ages 70+) are not meeting their RDA for calcium.<sup>3</sup> If you still are unable to meet your calcium recommendation from diet alone, you may want to determine an appropriate supplementation regimen to help you fill the gap from your dietary intake.

FOOD	SERVING SIZE	CALCIUM
Yogurt, plain, low-fat	1 cup	415 mg
Sardines, with bones	1 can (3.75 oz)	351 mg
Orange juice, fortified	1 cup	349 mg
Milk (fat-free, 1% or 2%)	1 cup	314-350 mg
Spinach, cooked	1 cup	245 mg
Cheddar cheese	1 oz.	204 mg
Mozzarella cheese, whole milk	1 oz.	143 mg



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## ARE YOU AT RISK FOR INADEQUATE CALCIUM INTAKE?

Inadequate calcium intake is prevalent within the entire population. In fact, population data shows that approximately 64% of those ages one year and older did not consume adequate calcium.<sup>5</sup>

You may be at particular risk if you:

- ✓ Are a man or woman who does not consume calcium-rich foods
- ✓ Are a woman
- ✓ Are post-menopausal
- ✓ Are lactose intolerant
- ✓ Avoid dairy products
- ✓ Follow a calorie restricted diet
- ✓ Are older than 70 years of age
- ✓ Have had weight loss surgery or a malabsorption disorder

## DOES CALCIUM SUPPLEMENTATION INCREASE THE RISK OF HEART ATTACKS?

The current evidence suggesting that calcium supplementation increases heart attacks is too weak to justify a change in prescribing habits.<sup>6</sup> In fact, there is ample evidence to support that appropriate calcium supplementation regimens are safe and have no negative effects on heart health. This evidence includes:

A systematic review concluded calcium supplements have minimal cardiovascular effects and that vitamin D at moderate to high doses alone or in combination with calcium may reduce cardiovascular risk.<sup>7†</sup>

Calcium supplementation at 1200 mg/day did not significantly increase the risk of atherosclerotic vascular disease in elderly women. Further analysis suggests that calcium supplementation may reduce the risk of hospitalization and mortality in patients with preexisting atherosclerotic cardiovascular disease.<sup>8†</sup>

## SO WHAT SHOULD HEALTHCARE PROFESSIONALS DO?

Work with your patients to understand their calcium needs, and encourage them to consume calcium-rich foods, such as low-fat dairy products regularly. For those who are still unable to meet their needs, discuss the potential to use calcium supplements as a safe and effective way to incorporate additional calcium into their diet.

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\*\*Based on 2017 U.S. News & World Report - Pharmacy Times Survey

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