



# CALCIUM & VITAMIN D

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## CALCIUM + VITAMIN D + EXERCISE = STRONG BONES

Calcium is the body's most abundant mineral, with around 99% of it found stored in our bones and teeth, but there is a tiny amount in the bloodstream where it plays an important role in nerve function and muscle contraction. This is in addition to assisting in blood clotting, blood pressure and supporting healthy pregnancy.

Keeping your bones strong depends more on preventing the loss of calcium from your body than on boosting your calcium intake. At certain times in your life you need to increase your calcium intake such as when you are young and growing or if you are pregnant or breast feeding.

### FACTORS AFFECTING CALCIUM ABSORPTION

Increased by:

- Vitamin D / exposure to sunlight
- Eating lots of fruit and vegetables
- Weight bearing exercise

Calcium loss is caused by:

- Smoking
- High caffeine intake
- High sodium intake
- High animal protein intake  
*(when protein is used for energy it creates sulphates which increases the amount of calcium excreted in your urine)*
- High phosphorus intake  
*(abundant in meats and soft drinks)*
- Lack of appropriate exercise
- Vitamin D deficiency

## BONE HEALTH

As well as calcium and vitamin D, many other nutrients such as magnesium (abundant in whole, plant based foods), vitamin K (green vegetables) and boron (found in fruits, vegetables, nuts and legumes) are required to support healthy bones. In addition, weight-bearing exercise is essential for building and maintaining bones.

## HOW MUCH CALCIUM DO WE NEED IN A DAY?

The recommended daily intakes of calcium (1,000 mg to 1,300 mg for adults and the elderly) in New Zealand are among the highest in the world. Britain's National Health Service recommends adults get 700 mg of calcium per day, and individuals in Nordic countries are within the 800 mg to 900 mg range. A 2003 World Health Organization report states that "In countries with a high fracture incidence, a minimum of 400 mg to 500 mg of calcium intake is required to prevent osteoporosis."<sup>2</sup>

The Physicians Committee for Responsible Medicine recommends adults consume 500 mg of calcium a day along with plenty of exercise and about 15 minutes sunlight exposure. Just remember not to get sunburnt.

## AGE AND CALCIUM INTAKE

"More than 90% of a person's bone mass develops before 20 years of age, and half of that bone mass develops from 11-15 years of age. To have strong bones, children and adolescents need to consume enough calcium to build up the bone mass that they will need throughout their lives."<sup>1</sup>

Adults don't need to continue to build bone mass but instead focus on maintaining and not losing calcium.

Bone loss accelerates with age, which means men over 70 and women after menopause require extra calcium to maintain their bone mass.

## PLANT SOURCES VS DAIRY SOURCES

While cow's milk is the best-known source of calcium, it unfortunately also comes with saturated fat, cholesterol, lactose, and antibiotics and pesticides.

On the other hand, calcium-rich plant foods contain fibre, folate, iron, antioxidants and many cancer-fighting nutrients that are not present in dairy foods.

It is also important to note that the calcium in dark green leafy vegetables such as kale, broccoli and bok choy, is absorbed about twice as well as the calcium in milk. The absorption rate of soy milk and cow's milk is about the same<sup>3</sup>. Do not forget to shake the soymilk before pouring to get the calcium that normally settles to the bottom.

GOOD SOURCES OF PLANT-BASED CALCIUM <sup>4</sup>	QUANTITY (mg)
Broccoli (1 cup, boiled)	62
Brussels sprouts (1 cup, boiled)	56
Orange (1 medium)	52
Carrots (2 medium, raw)	40
Navy beans (1 cup, boiled)	126
Soybeans (1 cup, boiled)	175
Soymilk (1 cup)	300
Tofu (1/2 cup, raw, firm)	253
Wheat bread (1 slice)	26
Dried figs (10 figs)	140
Blackstrap molasses (1tbs)	200
Sesame seeds (1tbs)	88

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