

Calcium and Osteoporosis

What is Calcium used for in the body?

Calcium is the most abundant mineral in the body. It is mostly stored in the bones but it is continuously being taken and replaced in the bones as the need for calcium even during the day varies. As you grow the calcium gets stored in the bones until adulthood and then we start losing calcium in the bones which gets worse for women after menopause and slowly decreases in men as well. Eventually this bone loss can lead to osteoporosis which is a thinning of the bones of the body to the point that it significantly increases your risk of fracture or break of your bones. Eating foods high in calcium allows your body to replace the calcium in your bones and maintain the balance. Calcium is also used for contracting and relaxing blood vessels, nerve and muscle function, cell signaling and hormone secretion, but again most of calcium is in the bones themselves. (Source- Mayo Clinic.com – Calcium Supplement, NIH.gov- factsheet on calcium)

What type of calcium should I use and how should I take it?

Calcium Carbonate is likely better than Calcium Gluconate from the perspective that there is more calcium in each mg of calcium carbonate. But Calcium Citrate has better absorption especially if you are on acid lowering medications for heartburn. It is best to avoid dolomite or bone meal as sources of calcium due to lead risks. Calcium is best split into 2-3 doses a day to make sure it is absorbed better as the more calcium in either food or as a supplement you take at once the lower the percentage of calcium that you actually absorb. Calcium is best absorbed when taken with a meal if it is calcium carbonate but calcium citrate can be taken with or without food. Side effects such as gas, bloating, and constipation are more common with calcium carbonate than calcium citrate. (Source- Mayo Clinic.com – Calcium Supplement, NIH.gov- factsheet on calcium)

Who is at risk for low calcium levels and/or osteoporosis?

Post menopausal women, men 70 and older, women in childbearing years who are athletes or have stopped having periods, lactose intolerant individuals, smokers, thin individuals, inactive individuals, family history of problems, drinking too much alcohol, and vegetarians. (Source- NIH.gov- factsheet on calcium)

When should I start taking calcium?

All ages and both males and female should consider it. Remember that bone loss will start in your 30s for females so starting calcium early and building up your stores is a good idea. As long as you are getting enough calcium in your diet consistently you may never need it. Trying to estimate the amount of calcium you get in your diet can be difficult unless you are consistent. Due to significant risks with osteoporosis, considering 500mg of calcium daily wouldnt be a bad idea for any one in their teens and beyond. While the decline in bone density starts earlier in females it is important to keep in mind that it will happen in males as well.

How much calcium should I take?

Due to concerns that too much calcium can cause atherosclerosis (plaque build up or hardening of the arteries) that could increase the risk of heart attacks we don't want to give too much calcium. What is too much calcium can vary on who you talk to but for the US RDA (recommended daily allowance) kids up to age 3- 400-800mg daily total in what you eat and

take as supplements, Children 4-10 is 800mg daily, Adolescent and adult males 800-1200 mg daily, Adolescent and adult females should be 800-1200mg daily and Pregnant and Breast Feeding females should be 1200mg. The Canadian recommendations are slightly higher for most of these groups and other groups may recommend higher levels as well. Just remember this is for a recommendation of total calcium intake in a day- which includes the calcium you get from your diet and from pills you take. That being said for now it seems like shooting for 1000-1200 mg of calcium daily(unless you get a lot of calcium in your regular diet) is a good amount. And make sure you don't forget the Vitamin D (see our website at http://www.northsidefammed.com/Page_2.php for our last newsletter about vitamin D) but also keep in mind that new studies may always change that recommendation. (Source- Mayo Clinic.com – Calcium Supplement)

What foods are high in Calcium?

Milk, yogurt, sardines (enjoy), salmon, most cheese, tofu, egg yolks, fortified foods, spinach, okra, collards, soy, kale, and shrimp. (Source- Mayo Clinic.com – Calcium Supplement, Webmb on calcium)

What are risks with taking too much calcium?

It can increase the risk of plaque buildup in the arteries and risks with heart attack and death but that has yet to be completely proven or disproven. Some studies suggest this risk, but it is not clear that the risk goes up for a heart attack. Also you can have constipation, potential for a slight increased risk of prostate cancer, kidney stones, and other kidney problems. (Source- NIH.gov- factsheet on calcium)

What are the benefits of taking calcium?

Remember, you want a total amount of calcium around the recommended daily allowance as noted in the “How much calcium should I take.” Calcium can reduce your risk of osteoporosis and it may reduce your risk of colon cancer. Risks with calcium include potential for kidney stones with supplements (but not with dietary calcium), the potential risk for heart attack (but no clear proof). (Source- NIH.gov- factsheet on calcium)

What medications and other things should I avoid or take at a different time than calcium?

Bisphosphonates (fosamax, Actonel, boniva, etc) should be taken at a different time than calcium. Also some antibiotics, phenytoin (dilantin), and levothyroxine (synthroid) should be taken at different times than the calcium. Caffeine, too much red meat, and antacids with aluminum or magnesium can decrease calcium levels, while hydrochlorothiazide and other thiazide diuretics can increase calcium levels. (Source- NIH.gov- factsheet on calcium, WebMD-Calcium)

What can happen when your calcium is low?

Osteoporosis or thinning of the bones that can cause a fracture of your bones which is most likely in women after menopause but it can also happen in elderly men as well. (Source- Mayo Clinic.com – Calcium Supplement)

Who should be screened for osteoporosis?

The National Osteoporosis Foundation recommends bone density testing if:

- You're a woman age 65 or older
- You're a postmenopausal woman under age 65 with one or more risk factors for osteoporosis

- You're a man age 70 or older
- You're a man between age 50 and 70 with one or more risk factors for osteoporosis
- You're older than age 50 and you've experienced a broken bone
- You're a postmenopausal woman and you've stopped taking estrogen therapy or hormone therapy

Return to the clinic soon to discuss this if you feel as though you fall into one of these categories and would like to be screened for osteoporosis.

(Source MayoClinic.com)

Who is at risk for osteoporosis?

Risk factors for osteoporosis include:

- Getting older, which increases your risk of osteoporosis because bones become weaker as you age
- Ethnicity — for instance, women who are white or of Southeast Asian descent have the greatest risk of osteoporosis, and African-American and Hispanic men and women have a lower, but still significant, risk of the disease
- Low body weight, or under 125 pounds (56.7 kilograms) if you're of average height
- A personal history of fractures after age 40
- A parental history of osteoporosis or hip fractures
- Using certain medications that can cause bone loss, especially steroids

(Source MayoClinic.com)

What are the dangers of osteoporosis?

The main risks of osteoporosis are the fracture risks in the back and in the hip. Most of the fractures in the back are compression fractures and can be very painful. The hip fractures are likely more concerning for risks with death. The risk of death from a hip fracture is 9% for 80 year old women. (Source- <http://www.everydayhealth.com/osteoporosis/osteoporosis-complications.aspx>)