Discussion on the critical role of calcium in preventing osteoporosis.

Jeri Nordin*

Department of Internal Medicine and Geriatrics, Angers University Hospital, Angers University Memory Center; UPRES EA 2646,University of Angers,UNAM, Angers, France

Introduction

Osteoporosis is a debilitating condition that affects millions of people worldwide. It is a condition characterized by the gradual loss of bone density, which weakens bones and increases the risk of fractures. While osteoporosis can affect anyone, it is particularly prevalent among older adults, postmenopausal women, and individuals with certain medical conditions. One of the most critical factors in preventing osteoporosis is ensuring adequate calcium intake. Calcium is an essential mineral that plays a vital role in maintaining healthy bones and teeth. Without sufficient calcium, the body cannot build and maintain strong, dense bones, making individuals more susceptible to osteoporosis

Calcium and bone health

Calcium is a key component of bone tissue, accounting for approximately 99% of the body's calcium stores. Bones are constantly undergoing a process of remodeling, whereby old bone tissue is broken down and replaced with new bone tissue. Calcium plays a vital role in this process, as it is essential for building and maintaining strong, dense bones. The body tightly regulates calcium levels, maintaining a constant balance between the calcium absorbed from food and the calcium released from bone tissue. When calcium intake is insufficient, the body begins to draw calcium from the bones, leading to a loss of bone density over time.

Calcium requirements

The recommended daily intake of calcium varies depending on age and gender. According to the National Institutes of Health, the recommended daily intake of calcium is as follows:

1. Infants (0-6 months): 200 milligrams (mg) per day
2. Infants (7-12 months): 260 mg per day
3. Children (1-3 years): 700 mg per day
4. Children (4-8 years): 1,000 mg per day
5. Children and Adolescents (9-18 years): 1,300 mg per day
6. Adults (19-50 years): 1,000 mg per day
7. Women (51 years and older): 1,200 mg per day
8. Men (51-70 years): 1,000 mg per day
9. Men (71 years and older): 1,200 mg per day

Pregnant and breastfeeding women also require higher amounts of calcium to support fetal and infant growth and development.

Best sources of calcium

Calcium is found in many different foods, including dairy products, leafy green vegetables, fish, and fortified foods. Dairy products are the most well-known source of calcium, with one cup of milk providing approximately 300 mg of calcium. However, individuals who are lactose intolerant or do not consume dairy products can still obtain adequate calcium from other sources. Leafy green vegetables, such as kale, spinach, and collard greens, are excellent sources of calcium, with one cup of cooked kale providing approximately 180 mg of calcium. Fish, such as salmon and sardines, are also good sources of calcium, with three ounces of canned salmon providing approximately 180 mg of calcium. Fortified foods, such as orange juice and breakfast cereals, are also excellent sources of calcium. However, it is important to check the labels to ensure that the products are fortified with calcium and that the calcium is in a form that the body can absorb.

Calcium supplements

For individuals who are unable to obtain adequate calcium from their diet, calcium supplements may be necessary. Calcium supplements come in various forms, including calcium carbonate and calcium citrate. Calcium carbonate is the most common form of calcium supplement, as it is relatively inexpensive and contains a high percentage of elemental calcium. It is important to note that calcium supplements should be taken in moderation, as Calcium Supplements.

Foods rich in calcium

Dietary sources of calcium include dairy products such as milk, yogurt, and cheese, as well as leafy green vegetables such as kale and broccoli. Other sources include fortified foods such as orange juice, soy milk, and cereals. It is important to note that some foods can interfere with the absorption of calcium, such as those high in oxalates or phytates, which are found in spinach, chard, and almonds. Foods high in protein and sodium can also increase the excretion of calcium from the body, which can lead to a negative calcium balance.

Conclusion

Calcium is a critical mineral that plays many important roles in the body, including building and maintaining strong bones and

***Correspondence to:** Jeri Nordin, Department of Internal Medicine and Geriatrics, Angers University Hospital, Angers University Memory Center; UPRES EA 2646,University of Angers,UNAM, Angers, France, E-mail: jeri.nordib90@edu.fr

***Received:** 28-Apr-2023, Manuscript No. AAINM-23-98226; **Editor assigned:** 01-May-2023, PreQC No. AAINM-23-98226(PQ); **Reviewed:** 16-May-2023, QC No. AAINM-23-98226; **Revised:** 19-May-2023, Manuscript No. AAINM-23-98226(R); **Published:** 26-May-2023, DOI: 10.35841/aainm-7.3.148*

***Citation:** Nordin J. Discussion on the critical role of calcium in preventing osteoporosis. Insights Nutr Metab. 2023;7(3):148*

teeth, aiding in muscle function and nerve transmission, and supporting proper blood clotting. A deficiency in calcium can lead to many health problems, including osteoporosis, which is a major public health concern, particularly among women over 50. Adequate intake of calcium through a combination of dietary sources and supplements, as needed, can help prevent the negative consequences of calcium deficiency and support overall health and wellbeing.

References

1. Ray NF, Chan JK, Thamer M, et al. Medical expenditures for the treatment of osteoporotic fractures in the United States in 1995: Report from the National Osteoporosis Foundation. J Bone Miner Res.1997;12(1):24-35.
2. Malabanan AO, Holick MF. Vitamin D and bone health in postmenopausal women. J Women's Health. 2003;12(2):151-6.
3. Heaney RP. Calcium, dairy products and osteoporosis. J Am Coll Nutr. 2000;19(sup2):83S-99S.
4. Rozen GS, Rennert G, Dodiuk-Gad RP, et al. Calcium supplementation provides an extended window of opportunity for bone mass accretion after menarche. Am J Clin Nutr. 2003;78(5):993-8.
5. Ho SC, Chen YM, Woo JL, et al. High habitual calcium intake attenuates bone loss in early postmenopausal Chinese women: An 18-month follow-up study. J Clin Endocrinol Metab. 2004;89(5):2166-70.

Citation: *Nordin J. Discussion on the critical role of calcium in preventing osteoporosis. Insights Nutr Metab. 2023;7(3):148*