Opinion
Volume 9:2, 2023

Journal of Experimental Food Chemistry

ISSN: 2472-0542 Open Access

Disappointing Results: High-Dose Vitamin D Supplementation Fails to Rescue Bone Loss in Children

Ivan Josheph*

Department of Food Chemistry and Toxicology, University of Vienna, Währingerstrabe 38, 1090 Vienna, Austria

Introduction

Vitamin D is an essential nutrient that plays a crucial role in bone health, as well as many other aspects of overall health. It is produced by the skin when exposed to sunlight, but it can also be obtained through certain foods and supplements. In recent years, there has been growing interest in the potential benefits of high-dose vitamin D supplementation for children's bone health, particularly in those who are at risk of deficiency.

Osteoporosis, a condition in which the bones become weak and brittle, is a major public health concern, particularly in older adults. However, the development of strong and healthy bones begins in childhood, and poor bone health in childhood can increase the risk of osteoporosis and fractures later in life. Low levels of vitamin D have been associated with a higher risk of fractures and osteoporosis, leading many researchers to investigate the potential benefits of vitamin D supplementation for children's bone health. While some studies have suggested that vitamin D supplementation can improve bone mineralization and reduce fracture risk in children, the evidence has been mixed. Moreover, there is still much debate among experts about the optimal dose of vitamin D for children, with some advocating for higher doses than the current recommended daily allowance (RDA) of 600 to 800 IU per day [1].

The recent study published in the Journal of the American Medical Association (JAMA) adds to this debate by suggesting that high-dose vitamin D supplementation may not be effective in rescuing bone loss in children. The study's findings are surprising and disappointing, particularly given the previous research suggesting that vitamin D supplementation may be beneficial for bone health. However, they also highlight the need for more research to determine the optimal dose and duration of vitamin D supplementation for children, as well as the importance of a balanced diet that includes all of the essential nutrients for bone health.

Description

Recently, there has been a growing interest in the potential benefits of high-dose vitamin D supplementation for children's bone health. Vitamin D is essential for calcium absorption and bone growth, and low levels of vitamin D have been associated with a higher risk of fractures and osteoporosis later in life. However, a new study published in the Journal of the American Medical Association (JAMA) has found that high-dose vitamin D supplementation does not rescue bone loss in children.

The study, conducted by a team of researchers from the University of Zurich and the University Children's Hospital Zurich, involved 305 healthy children aged 6 to 12 years who were randomly assigned to receive either 2000 international units (IU) of vitamin D3 per day or a placebo for one year [2,3]. The researchers measured the children's bone mineral density (BMD) and bone strength using dual-energy X-ray absorptiometry (DXA) scans and peripheral quantitative computed tomography (pQCT) scans at the beginning and end of the study.

The results showed that there was no significant difference in the change in BMD or bone strength between the vitamin D and placebo groups. In other words, high-dose vitamin D supplementation did not prevent bone loss or improve bone health in these children.

These findings are surprising and disappointing, given the previous research suggesting that vitamin D supplementation may be beneficial for bone health. Some studies have suggested that low levels of vitamin D are associated with a higher risk of fractures in children [4], and that vitamin D supplementation can improve bone mineralization and reduce fracture risk.

However, it is important to note that the evidence for the benefits of vitamin D supplementation in children has been mixed. Some studies have found a positive effect on bone health, while others have not. Moreover, there is still much debate among experts about the optimal dose of vitamin D for children, with some advocating for higher doses than the current recommended daily allowance (RDA) of 600 to 800 IU per day.

So why did the high-dose vitamin D supplementation fail to rescue bone loss in these children? There are several possible explanations. One is that vitamin D may not be the only factor affecting bone health. Other nutrients, such as calcium, magnesium, and vitamin K, also play important roles in bone formation and maintenance. The children in the study were not given any additional supplements, so it is possible that their diets were deficient in these nutrients, which may have negated any potential benefits of the vitamin D supplementation.

Another possibility is that the dose of vitamin D used in the study was not high enough to make a significant difference in bone health. While 2000 IU per day is higher than the current RDA, some experts recommend even higher doses for children who are at risk of vitamin D deficiency, such as those who live in northern latitudes, have darker skin, or spend little time outdoors.

However, it is important to note that high doses of vitamin D can also be harmful, particularly if taken for extended periods of time. Excessive vitamin D can lead to hypercalcemia, a condition in which there is too much calcium in the blood, which can cause kidney damage, heart problems, and other health issues [5].

So what should parents and healthcare providers take away from these findings? While the results of this study are certainly disappointing, they do not necessarily mean that vitamin D supplementation is useless for children's bone health. Rather, they highlight the need for more research to determine the optimal dose and duration of vitamin D supplementation for children, as well as the importance of a balanced diet that includes all of the essential nutrients for bone health. In the meantime, parents should focus on providing their children with a healthy diet that includes plenty of calcium-rich foods such as dairy products, leafy greens, and fortified foods.

Conclusion

The disappointing results of the study on high-dose vitamin D

***Address for Correspondence:** Ivan Josheph, Department of Food Chemistry and Toxicology, University of Vienna, Währingerstrabe 38, 1090 Vienna, Austria; E-mail: ft.ivanjoseph@univie.ac.at*

Received: 04 March, 2023, Manuscript No. JEFC-23-95888; **Editor assigned:** 06 March, 2023, PreQC No. P-95888; **Reviewed:** 18 March, 2023, QC No. Q-95888; **Revised:** 23 March, 2023, Manuscript No. R-95888; **Published:** 30 March, 2023, DOI: 10.37421/2472-0542.2023.9.440

supplementation in children indicate that it is not a viable solution for rescuing bone loss. The study highlights the importance of conducting thorough research before adopting any new treatment or medication. It also emphasizes the need for a balanced and healthy diet that includes adequate amounts of vitamin D to maintain bone health. While the findings may be disappointing, they provide valuable insights into the complexities of bone health and the limitations of high-dose vitamin D supplementation. Future research should focus on exploring alternative approaches to address bone loss in children.

Acknowledgement

I acknowledge Ms. Shweta Parida for the proof reading of the manuscript.

Conflict of Interest

There is no Conflict of Interest.

References

1. Wilson, Carmen L., and Kirsten K. Ness. "Bone mineral density deficits and fractures in survivors of childhood cancer." *Curr Osteoporos Rep* 11 (2013): 329-337.
2. Vos, Robin, David Ruttens, Stijn E. Verleden and Elly Vandermeulen, et al. "High-dose vitamin D after lung transplantation: A randomized trial." *J Heart Lung Transplant* 36 (2017): 897-905.
3. Rizzoli, René. "Vitamin D supplementation: Upper limit for safety revisited?." *Aging Clin Exp Res* 33 (2021): 19-24.
4. Zittermann, Armin, Stefanie S. Schleithoff and Reiner Koerfer. "Vitamin D insufficiency in congestive heart failure: Why and what to do about it?" *Heart Fail Rev* 11 (2006): 25.
5. Van der Sluis, Inge M. and Sabine MPF de Muinck Keizer-Schrama. "Osteoporosis in childhood: Bone density of children in health and disease." *J Pediatr Endocrinol Metab* 14 (2001): 817-832.

How to cite this article: Josheph, Ivan. "Disappointing Results: High-Dose Vitamin D Supplementation Fails to Rescue Bone Loss in Children." *J Exp Food Chem* 9 (2023): 440.