

Concept or Problems



Deficiency can lead to:

Scurvy

Gingivitis

Weakened tooth enamel

Anemia

Bone pain

Impaired immunity

Overdose may cause:

Digestive discomfort

Nausea

Diarrhea

Stomach cramping and bloating

General abdominal discomfort

May cause dental erosion

Taking vitamin C in high doses cause vitamin

B-12 deficiency

Toxicity is rare

Conclusion

- Vitamin C deficiency and insufficiency persists and likely contribute to suboptimal bone health.
- The effect on bone health is vital and has proven to be regulated through a series of complex mechanisms of interaction.
- Supports epithelial barrier function against pathogens
- Vitamin C deficiency results in impaired immunity and higher susceptibility to infections.

References

Aghajanian, P., Hall, S., Wongworawat, M. D., & Mohan, S. (2015, September 11). The Roles and Mechanisms of Actions of Vitamin C in Bone: New Developments. Wiley Online Library. asbmr.onlinelibrary.wiley.com. 30(11), 1945-1955.

Carr, C. A. & Maggini, S. 2017. Vitamin C and immune function. *National Library of Medicine*. 9(11) 1211

Cecchini-259, Jill. "Vitamin c Update: Implications for Periodontal Health and Healing." *Oral Health Group*, 12 Oct. 2017

National Institutes of Health. "Office of Dietary Supplements - Vitamin C." *Nih.gov*, 26 Mar. 2021, ods.od.nih.gov/factsheets/VitaminC-HealthProfessional/.

"Vitamin c (Ascorbic Acid) Information | Mount Sinai - New York." *Mount Sinai Health System*



Vitamin C

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What is Vitamin C?

- Also known as Ascorbic Acid
- An antioxidant
 - involved in regulation of function, development, & cells within the body
- Essential nutrient found in fruits and vegetables
- Needed in small amounts for normal body function:
 - Formation of collagen
 - Absorption of iron
 - Proper functioning of the immune system
 - Wound healing
 - Maintenance of cartilage, bones, & teeth.

Biochemistry Knowledge

- A water-soluble compound necessary for enzyme activation, oxidative stress reduction, and immune function
- Most heat labile vitamin
- Essential nutrient
- Humans cannot synthesize ascorbic acid due to deficiency of single enzyme L-gulonolactone oxidase
 - must be obtained from diet
- Rapidly absorbed in the intestine and excreted in urine
- Involved in synthesis of collagen fibers

Current Status

- Systemically beneficial in prevention of heart disease and certain cancers
- Antiatherosclerosis and anti-cariogenic properties
- Lowers risk of hypertension.
- A preventative agent against Alzheimer's disease.
- Dietary Approaches to Stop Hypertension (DASH) is recommended by nutritionists to have plenty of Vitamin C which contains antioxidants.



Health Benefits

- Antioxidant and protector of cells and DNA
- Key factor in synthesis of collagen
- Anti-aging effects
- Assist in prevention of diverse infections and common cold
- May boost immune system
- May lessen risk of heart disease
- May prevent iron deficiency anemia
- May improve healing of pressure ulcers
- May protect against cognitive impairment and Alzheimer's disease
- May improve mood
- May lower LDL cholesterol (bad cholesterol)

Periodontal Health

- Maintains periodontium
- Decreased risk of periodontal disease
- Promotes healing
- Forms new collagen
- Assist with prevention of tooth loss

