

CALCIUM AND VITAMIN D DEFICIENCY

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DOI: <http://doi.org/10.47211/trr.2023.v09i01.001>**ABSTRACT**

Vitamin D is a fat-soluble vitamin that plays critical roles in the proper functioning of your body, including bone health and immunity. It may even help prevent cancer and protect against several chronic conditions, including. Inadequate consumption of calcium-rich food is one of the reasons for calcium deficiency in children. Hypocalcemia that outcomes from diet d deficiency are maximum installed for the duration of durations of rapid growth, at the side of in infancy and youth. That's why getting enough of this nutrient on a daily basis can be difficult, especially for children. Plus, the time of year, cloud cover, sunscreen use, and skin pigmentation can all impact UV radiation exposure and vitamin D synthesis in the skin Importance of Vitamin D. Knee deformity is described as an alteration inside the normal structural alignment and corners of bones comprising the knee joint thereby compromising the ordinary congruity of the joints. Milk is the best source of calcium. Other dairy products are also rich in calcium.

Key Words: Calcium, vitamin D, calcium deficiency.

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INTRODUCTION

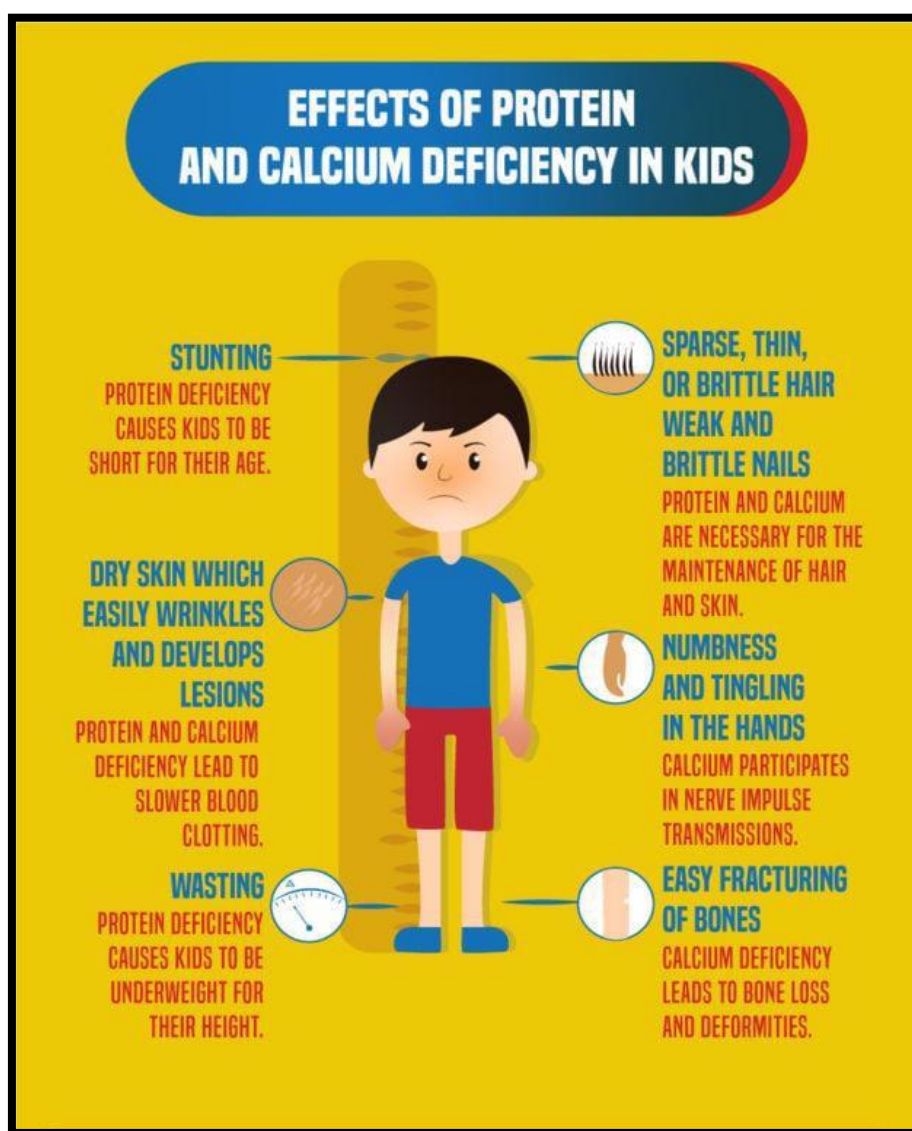
Rickets first seems in 6-to-24-month vintage children with impaired mineralization of the developing bones major to rickets and accompanying bone ache, muscular tenderness, hypocalcemic tetanus, behind-schedule enamel eruptions, overdue closure of the fontanel and expansion of the joints mainly of the lengthy bones. Knee deformity is described as an alteration inside the normal structural alignment and corners of bones comprising the knee joint thereby compromising the ordinary congruity of the joints. The maximum usual motive for continual knee deformity in children globally is rickets. (Allgrove J 2004)

Hypocalcemia that outcomes from diet d deficiency are maximum installed for the duration of durations of rapid growth, at the side of in infancy and youth. Loss of compliance is an essential purpose for loss of reaction to remedy and a choice to save you this is to administer a high dose of 1, 00,000 to 6, 00,000 IU over 1-5 days. Doses of 10000 gadgets /kg in the location of smaller doses over a longer duration decided through maintenance doses have also been reported to be effective. Shah and Feinberg have efficaciously administered 1 lakh IU 6 times in 12 hours period. Every one- of-a-kind advantage of Stoss therapy is that vitamins are efficiently stored in fat tissues and muscle and is constantly converted into action. (Balasubramanian S 2011)

Sources of vitamin D

Only a few foods contain high levels of vitamin D, such as: (Carissa Stephens R.N,2022)

- trout
- salmon
- fortified milk
- certain types of egg yolks



That's why getting enough of this nutrient on a daily basis can be difficult, especially for children. Even though sun exposure covers some of your daily needs for this vitamin, it's unclear how much sunlight exposure is needed to maintain optimal levels in adults and kids. Plus, the time of year, cloud cover, sunscreen use, and skin pigmentation can all impact UV radiation exposure and vitamin D synthesis in the skin. Importance of Vitamin D Vitamin D is a fat-soluble vitamin that plays critical roles in the proper functioning of your body, including bone health and immunity. It may even help prevent cancer and protect against several chronic conditions, including. (National Institutes of Health Office of Dietary Supplements):

- bone loss
- depression
- type 2 diabetes
- heart disease
- multiple sclerosis

An estimated 1 billion people around the globe have low blood levels of the vitamin. One research review found that almost 42% of U.S. adults have a vitamin D deficiency. This figure goes up to almost 63% in Hispanic adults and 82% in African American adults.

Causes of Calcium Deficiency in Children

Inadequate consumption of calcium-rich food is one of the reasons for calcium deficiency in children. Milk is the best source of calcium. Other dairy products are also rich in calcium.

1. Children born to mothers who have calcium and vitamin D deficiency.
2. Bottle-fed children are at risk of suffering from calcium deficiency. This is because calcium found in a mother's milk is more well absorbed than bottle-fed milk.
3. Inadequate sunlight exposure is also one of the causes. Sunlight is a rich source of vitamin D. adequate amount of vitamin D and phosphate helps to absorb calcium.
4. Improper absorption of calcium from the intestine. It can be due to several factors such as chronic diarrhea, certain intestinal problems, liver diseases, etc. Consuming cereals and other products which have high phytate compounds can interfere with calcium absorption from the intestine.
5. Another reason for calcium deficiency-induced bone disease is total parenteral nutrition. A child, who is given intravenous nutrition for any reason, may suffer from calcium deficiency. However, it can be corrected with the addition of calcium.

TREATMENT (<https://my.clevelandclinic.org/health/diseases/23143-hypocalcemia>)

- **Oral calcium pills:** Calcium pills or supplements may be used to restore your calcium to normal levels.
- **Vitamin D supplement:** People who have chronic hypocalcemia often take a vitamin D supplement along with calcium pills so that their bodies can properly absorb the calcium.
- **Synthetic form of parathyroid hormone (PTH):** If you have hypoparathyroidism that is causing hypocalcemia, your healthcare provider may have you take a synthetic form of PTH.
- **IV calcium gluconate:** If your hypocalcemia is severe and you are experiencing muscle cramps or spasms (tetany), you may receive an IV of calcium gluconate in the hospital.
- **Other medications:** Depending on the cause of your hypocalcemia, you may have to take other medications to treat/and or manage the cause.

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