

## Correlation of sunlight exposure with vitamin D status in breastfed infants

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### Abstract

**Objective:** To correlate sunlight exposure to vitamin D status in predominantly breastfed infants; and to quantify sunlight exposure required to achieve serum 25(OH)D level >20 ng/mL, by 6 months of age.

**Methods:** 132 healthy term, predominantly breastfed infants were enrolled at 6-8 weeks of age. Of these, 100 infants were available for final evaluation. Maternal serum 25(OH)D levels were obtained at enrolment. Mothers were counselled regarding a daily record of duration of sunlight exposure, timing of exposure, and body surface area exposed, for the infant, on a pre-designed performa. Infant's serum 25(OH)D was measured at 6 months of age. Cumulative Sun Index (CSI) was calculated and correlated with the infant serum 25(OH)D after adjusting for confounding factors. Sun index for exposure before 10am and between 10am and 3pm were correlated to 25(OH)D.

**Results:** Ninety mothers had serum 25(OH)D <12 ng/mL. Median duration of sunlight exposure of infants was 17 min/week, on 6% of body surface area. CSI correlated positively to infants' serum 25(OH)D levels at 6 months ( $r=0.461$ ,  $P<0.001$ ). Increment in afternoon sun index by 1 unit increased serum 25(OH)D levels by 1.07 ng/mL (95% CI 0.37-1.78;  $P=0.003$ ). Weekly 30 minute sunlight exposure, between 10 am and 3 pm, over 40% body area (infant clothed in diapers, in prone position) for at least 16 weeks, was estimated requirement to achieve 25(OH)D levels >20 ng/mL by 6 months of age.

**Conclusions:** There is a significant positive correlation between afternoon sunlight exposure and infant's vitamin D levels, independent of maternal vitamin D status.



### Biography:

Pinky Meena is a passionate pediatrician with a will to improve healthcare. Currently working as Senior resident, Department of Pediatrics, UCMS & G.T.B Hospital, Delhi. Her research is related to Nutrition, which is a very effective tool in child health. The alarming prevalence of Vitamin D deficiency in tropical country like India has raised concern, with dire need to find out solutions. Her research has given the foundation for further work, which might contribute significantly towards issuing public health recommendations. She is currently

working on the same lines ahead. She has had three publications in indexed journals. She has also contributed to a chapter in IAP textbook of Pediatric Emergencies. Apart from academics she loves to indulge herself in writing poems and eco and cultural tourism.

### Speaker Publications:

1. Pinky Meena et al ; Effect of Folic Acid Supplementation on Seizure Control in Epileptic Children Receiving Long Term Antiepileptic Therapy: Correspondence. 2019 Feb 13
2. Pinky Meena et al ; Screen Time in Indian Children by 15-18 Months of Age. 2020 August
3. Pinky Meena et al ; Management of chemotherapy-induced nausea and vomiting. 2010 Feb
4. Pinky Meena et al ; Role of folic acid supplementation in prevention of neural tube defects: physicians yet unaware! 2010 Sep
5. Pinky Meena et al ; 50 Years Ago in The Journal of Pediatrics: Vitamin D Deficiency Rickets in Greece. 2018 Aug

4<sup>th</sup> International Conference on

**Tumor & Cancer Immunology and Pediatric-oncology**  
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