Pediatric RESEARCH

IMAGE

Insights image for vitamin D binding protein polymorphisms significantly impact vitamin D status in children

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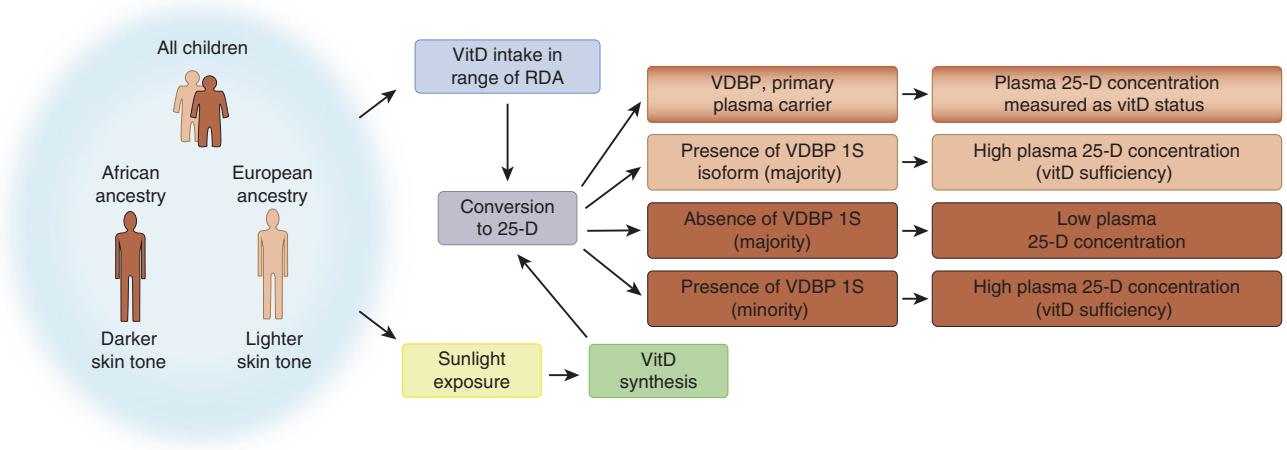
Pediatric Research (2019) 86:674; https://doi.org/10.1038/s41390-019-0476-7

The secosteroid prohormone vitamin D (vitD) is obtained in two ways: endogenous synthesis after sunlight exposure or through dietary intake. Generally, persons of darker skin tone will synthesize less vitD than people with lighter skin tone exposed to the same amount of sunlight. The intermediate metabolite 25-hydroxyvitamin D (25-D) is the principal vitD circulating form, and 25-D plasma concentration is the currently accepted measure of vitD status. VDBP, the major plasma carrier of vitD metabolites, occurs as 3 common allelic forms whose frequencies greatly differ by race/ethnicity. We found in children meeting the U.S. recommended daily allowance (RDA) of vitD intake (currently 600 IU/day), the presence of the 1S VDBP form (common with European ancestry) was associated with significantly higher plasma 25-D. In the children of African ancestry attaining vitD RDA in our study, mean vitD sufficiency was only reached in the minority who carried the 1S VDBP allele. These findings may inform public health policy of uniformity in recommended childhood vitD dosage, especially with regard to racially/ethnically associated disparities.

REFERENCE

Newton, DA et al. Vitamin D binding protein polymorphisms significantly impact vitamin D status in children. *Pediatr Res.* (2019). https://doi.org/10.1038/s41390-019-0322-y.



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Received: 23 May 2019 Accepted: 14 June 2019
Published online: 24 June 2019