

Title: Comparison of Baseline Vitamin D Status in Pregnant Black, White, and Hispanic Women

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The purpose of this study is to measure and compare baseline Vitamin D status in Black, White, and Hispanic pregnant women residing in a sunny climate. The prevalence of vitamin D deficiency among US women is rising, even in the sunny climates and despite Vitamin-D fortification in prenatal vitamins and the food supply. Ironically, minority pregnant/breastfeeding woman and their infants of darker skin pigmentation are at highest risk despite their increasing or already high rates of breast-feeding. We sought to assess vitamin D status and bone mineral density (BMD) in pregnant women of different racial ethnicities. Maternal serum circulating 25(OH)D3 and BMD (via DEXA) were taken at baseline (12-16 weeks gestation) in 142 Hispanic, 106 white and 51 black pregnant women. Serum vitamin D deficiency was defined as <20 ng/mL, insufficiency as 21-30 ng/mL, and sufficiency as >30 ng/mL. BMD deficiency was defined as t-scores (comparison of BMD to average peak bone mass at age 30) < 1.0. Results demonstrated a statistical difference ($p < 0.05$) in serum deficiency and insufficiency in all groups (80.3% and 15.6% in Blacks, 9.4% and 43.4% in Whites, and 33.1% and 46.5% in Hispanics, respectively). Black women had an average (\pm standard deviation) baseline level of 15.84 ± 8.21 ; Hispanics were 23.36 ± 7.97 , and Whites were 29.58 ± 8.31 ($p < 0.00005$). BMD t-scores were 1.05 ± 0.13 (blacks), 1.00 ± 0.12 (Hispanics), and 0.99 ± 0.11 (Whites). These results suggest that all pregnant women are at risk of vitamin D insufficiency, even those residing in a southern, coastal US region. The inconsistency in serum and bone levels in white woman suggests other factors may be protecting BMD in ethnic/minority women.