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Low Vitamin D in Candidates for Bariatric Surgery: Are the Americans Better Off than the French?

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We read with interest the article by Dr. Ducloux and colleagues in which the authors demonstrate that 96% of patients presenting for bariatric surgery in France are vitamin D deficient [1]. We recently conducted a study in 340 morbidly obese patients presenting for bariatric surgery at the Center of Minimally Invasive Surgery at St. Luke's-Roosevelt Hospital in New York. Only 65% of the NY patients were vitamin D deficient using the same cutoff point of 50 nmol/L, and their mean vitamin D level was substantially higher compared to that of patients in France (47 ± 26 nmol/L versus 31 ± 13 nmol/L). The NY patients were ethnically diverse with 43% Hispanics, 30% African-Americans, and 27% Caucasians. In contrast with Ducloux et al., we found differences in vitamin D levels between ethnic groups ($P < 0.001$, ANOVA with Tukey's post hoc tests). African-Americans had lower levels of vitamin D (39 ± 17 nmol/L) than both Caucasians (55 ± 25 nmol/L, $P < 0.001$) and Hispanics (49 ± 30 nmol/L, $P = 0.006$). In addition, vitamin D levels were negatively correlated with BMI ($P = 0.017$, $r = -0.130$) and strongly associated with ethnicity.

Only 24% of African-Americans presenting for bariatric surgery had vitamin D levels ≥ 50 nmol/L, versus 34% of Hispanics and 48% of Caucasians ($P < 0.001$ by the chi-square test). In Ducloux's patients, the absence of associations between ethnicity, BMI, and vitamin D levels may be due to the small number of patients studied ($n = 50$). One can only speculate why the vitamin D levels are substantially lower in the Parisian French than in American patients [2]. Sun exposure may have been different between the two independently studied cohorts; however, this was found not to be an important factor in Ducloux's and Goldner's studies.

Intake of vitamin D is known to be lower in Europe compared to North America, in part the result of American food supplement policies. In addition, Americans, regardless of their age, are twice more likely than Europeans to take vitamin D supplements [3]. Another reason for the difference of levels between the two studies might simply lie in the type of assay used. Radioimmunoassay, which was used in Ducloux et al., yields vitamin D levels that are 15% to 25% lower than the reference method liquid chromatography–tandem mass spectrometry [4]. The French and the American patients presenting for bariatric surgery most likely share the same low vitamin D phenotype. We are in complete agreement with Ducloux et al. regarding their concern about the additional lifetime risk of malabsorptive surgery in morbidly obese patients with baseline hypovitaminosis D. This underlines the need for a multidisciplinary approach in the long-term care for this ever-growing number of patients, as well as the need to implement guidelines for vitamin D supplementation in this vulnerable population.

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