Vitamin D Deficiency Contributes To Weight-Loss Surgery

Most adolescents preparing for bariatric surgery are deficient in vitamin D, a new study demonstrates. The results will be presented at The Endocrine Society's 94th Annual Meeting in Houston.

"This is particularly important prior to bariatric surgery where weight loss and decreased calcium and vitamin D absorption in some procedures may place these patients at further risk," said study lead author Marisa Censani, M.D., pediatric-endocrinology fellow at Columbia University Medical Center, in New York City. "These results provide insight into prevalence and risk factors for pre-existing vitamin D deficiency in obese adolescents prior to bariatric surgery."

In the United States, weight-loss surgery is becoming an increasingly common procedure due to the obesity epidemic, which affects people of all ages, including children. One of the most common types is gastric-bypass surgery, which involves surgically removing a portion of the stomach, thereby reducing its size and ability to hold large amounts of food. While highly effective at controlling weight, weight-loss surgery presents certain challenges. One of the greatest post-surgical difficulties is maintaining adequate nutrition, particularly with respect to factors associated with bone development since adolescents have not yet reached their peak bone mass.

Vitamin D is found in foods such as eggs, milk, and fish, as well as the sun. The vitamin plays an essential role in regulating the amount of the minerals calcium and phosphorus circulating in the blood. While previous studies have found an increased risk of vitamin D deficiency among adults evaluated for weight-loss surgery, whether this deficiency also occurred among morbidly obese adolescents remained unclear. Morbid obesity is defined in adults as having a weight-to-height ratio, or BMI, greater than 40; a healthy BMI is no more than 24.9.

In one of the first studies of its kind, Censani and her co-investigators found that more than half of adolescents undergoing evaluation for weight-loss surgery were vitamin D deficient, and eight percent had severe deficiencies. Slightly less than one-fifth had adequate vitamin D levels. Patients with the highest BMIs were the most likely to be vitamin deficient. In other findings, investigators identified several racial differences. African Americans were the most likely to be vitamin D deficient, while Caucasians were the least likely to have a deficiency. Specific percentages of vitamin D deficiency among racial subgroups were:

- 82 percent of African Americans
- 59 percent of Hispanics
- 37 percent of Caucasians

"These results support screening all morbidly obese adolescents for vitamin D deficiency, and treating those who are deficient, particularly prior to bariatric procedures that could place these patients at further risk,"

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