Introduction: Recent studies have suggested a link between low serum vitamin D levels and insulin resistance. Moreover, those who are overweight or obese tend to have a high prevalence of insufficient or fully deficient serum vitamin D levels. To date, studies of vitamin D status and insulin resistance prevalence have focused mainly on the adult population, but it is no secret that childhood obesity rates are increasing, prompting respective increases in insulin resistance and type II diabetes mellitus among this group as well.

Methods: A retrospective chart review was used to gather data from the pediatric and adolescent patients of the obesity clinic of University of Missouri Health Care run by Dr. Aneesh Tosh. Fasting serum insulin was measured to assess insulin insufficiency. Subjects were classified as vitamin D (25(OH)D) sufficient, insufficient, or deficient based on the traditional definition (serum 25(OH)D < 20 ng/ml for deficient and serum 25(OH)D 20-30 as insufficient).

Results: 34 patients were assessed for serum 25-hydroxyvitamin D level. Of this sample, 30 (88%) had subnormal levels with 14 (41%) of those being deficient and 16 (47%) being insufficient. There were no significant 25(OH)D group differences in insulin resistance, although each group was hyperinsulinemic as a whole (mean fasting insulin 40.3 and 29.9 µIU/ml for 25(OH)D deficient and insufficient respectively).

Conclusion: Vitamin D deficiency is exceptionally prevalent in overweight and obese adolescents and may promote insulin resistance. More data should be gathered which might prove to find a stronger relationship between 25(OH)D levels and insulin resistance.