

**TITLE: OBSTRUCTIVE SLEEP APNEA AND EARLY WEIGHT LOSS AMONG ADOLESCENTS THAT UNDERGO BARIATRIC SURGERY AT CHILDREN'S HOSPITAL COLORADO**

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**ABSTRACT BODY:**

**Purpose of Study:** Adult literature demonstrates impressive results regarding the effect of bariatric surgery in ameliorating obstructive sleep apnea (OSA) however data are scarce in pediatric literature. As morbid obesity and OSA become increasingly common in adolescents, it is important to quantify the prevalence of OSA and the effects of surgical intervention in this unique, growing population.

**Methods Used:** Retrospective chart review of adolescents enrolled in the Bariatric Surgery Center at Children's Hospital Colorado (CHCO) with pre- and post-surgical polysomnography (PSG) between 06/17-08/19 (70/83 total patients). Inclusion criteria was based on availability of presurgical PSG results. Variables including age, gender, race, comorbidities, PSG results, and weight were collected. Pediatric OSA criteria were applied to PSG results to determine presence of OSA. Tests for nonparametric data were used to compare baseline characteristics and surgical outcomes between patients with and without preoperative OSA.

**Summary of Results:** The prevalence of OSA among those with preoperative PSG, defined as apnea hypopnea index  $\geq 1$ , was 77% pre-surgery, with 44% demonstrating severe OSA by OAH  $\geq 10$ . There were no significant differences in race, gender, BMI, or comorbidities according to diagnosis of OSA. Of 12 patients with preoperative OSA and a postoperative sleep study, 58% resolved their OSA an average of 4.92 months post-surgery. Average preoperative BMI for resolving patients was 45.46 versus 56.76 in those who did not have resolution of OSA ( $p=0.03$ ). Average change in BMI from pre- to post-operative sleep study was -21.9% in the resolved group and -13.5% in the unresolved group ( $p=0.12$ ).

**Conclusions:** The prevalence of OSA in the population of adolescents seen in the Bariatric Surgery Center at CHCO was more similar to the estimated prevalence in adults seeking bariatric surgery (74%) than the general population of adolescent with obesity (43%). Resolution of OSA after surgery correlated with lower preoperative BMI, but sample size limited further analysis.