

# UC San Diego

## UC San Diego Previously Published Works

### Title

0611 Screening for Obstructive Sleep Apnea in the Bariatric Surgery Population

### Permalink

<https://escholarship.org/uc/item/3hf8w2s2>

### Journal

Sleep, 43(Supplement\_1)

### ISSN

0161-8105

### Authors

Kreitinger, K  
Lui, MM  
Owens, R  
[et al.](#)

### Publication Date

2020-05-27

### DOI

10.1093/sleep/zsaa056.608

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

definition of  $\geq 3\%$  oxygen desaturation. The studies were reanalyzed using a hypopnea definition of  $\geq 4\%$  oxygen desaturation.

**Results:** Fourteen patients [9 (64%) males,  $46 \pm 14$  yrs, BMI  $31 \pm 6$  kg/m<sup>2</sup>, ESS  $7 \pm 5$ , REI  $9 \pm 3$  events/hr, mean SaO<sub>2</sub>  $94 \pm 2\%$ , lowest SaO<sub>2</sub>  $81 \pm 6\%$ , %TST SaO<sub>2</sub>  $< 90\% 4 \pm 6\%$ ] were identified with positional OSA (supine REI  $16 \pm 7$  events/hr, non-supine REI  $3 \pm 1$  events/hr) using a hypopneas definition of  $\geq 3\%$  oxygen desaturation. When reanalyzed using a hypopnea  $\geq 4\%$  oxygen desaturation there was a significant decrease in the REI to  $7 \pm 2$  events/hr ( $p < 0.001$ ). Three patients (21%) no longer were considered to have OSA. These patients were younger ( $32 \pm 14$  vs.  $50 \pm 11$  yrs,  $p = 0.03$ ) and had less severe OSA (REI  $6 \pm 1$  vs.  $9 \pm 3$  events/hr ( $p = 0.04$ ), but there was no difference in BMI ( $32 \pm 11$  vs.  $31 \pm 5$  kg/m<sup>2</sup>,  $p = 0.9$ ) or mean and lowest SaO<sub>2</sub> ( $96 \pm 0.4$  vs.  $94 \pm 2\%$ ,  $p = 0.13$ , and  $82 \pm 8$  vs.  $81 \pm 6\%$ ,  $p = 0.9$ , respectively).

**Conclusion:** In patients with mild positional OSA, using a hypopnea definition of at least 4% vs. 3% oxygen desaturation on a HSAT will have a significant effect on the overall REI and often exclude patients who would otherwise be treated for OSA.

**Support:** None.

## 0611

### SCREENING FOR OBSTRUCTIVE SLEEP APNEA IN THE BARIATRIC SURGERY POPULATION

Kreitinger, K.<sup>1</sup> Lui, M. M.<sup>2</sup> Owens, R.<sup>1</sup> Schmickl, C.<sup>1</sup> Grunvald, E.<sup>1</sup> Horgan, S.<sup>1</sup> Malhotra, A.<sup>1</sup>

<sup>1</sup>UC San Diego, San Diego, CA, <sup>2</sup>The University of Hong Kong, Hong Kong, HONG KONG.

**Introduction:** Obstructive sleep apnea (OSA) is prevalent in the bariatric surgery population and has been associated with increased perioperative risk, especially if OSA is moderate-severe (apnea-hypopnea index  $\geq 15$ /h). Consequently, screening for OSA is recommended as part of the preoperative evaluation. Several screening tools for OSA have been developed; however, some tools lack validation and their relative performance is unclear. The purpose of this study was to compare four existing screening tools (Epworth Sleepiness Scale (ESS), STOP-BANG, NO-OSAS, and No-Apnea) with regards to the ability to identify patients with moderate-severe OSA among bariatric surgery patients.

**Methods:** We retrospectively reviewed data from Jan 2015 to Mar 2019 for adult patients presenting consecutively to UC San Diego for first-time bariatric surgery who had undergone a home or in-lab sleep study (within one year of the initial encounter for bariatric surgery), which is our standard of care. We compared the accuracy of the four screening tools for detecting moderate-severe OSA based on the area under the receiver operating characteristic curves (AUC). Subgroup analyses were explored based on sex, BMI, and ethnicity (Hispanic/Latino vs non-Hispanic/Latino).

**Results:** Of the 214 patients (83.2% female, median age 39 years) included in the study, 45.4% had moderate-severe OSA. STOP-BANG (AUC 0.75 [95%CI: 0.68 to 0.81]) and NO-OSAS (AUC 0.76 [95%CI: 0.69 to 0.82]) had similar performance ( $p = 0.62$ ); both performed significantly better than the ESS (AUC 0.61 [95%CI: 0.54 to 0.68];  $p = 0.02$  for both). STOP-BANG and NO-OSAS tended to perform better in the female vs male subgroup, but this finding did not reach statistical significance.

**Conclusion:** STOP-BANG and NO-OSAS are superior to the ESS when screening bariatric surgery patients for moderate-severe OSA. In future analyses we will further explore if adjustments of standard cut-offs improve test characteristics (i.e. sensitivity/specificity) when screening bariatric surgery patients (analyses ongoing).

**Support:** None.

## 0612

### VALIDATION OF NEMS-BG SCORE IN SCREENING OF PATIENTS WITH OBSTRUCTIVE SLEEP APNEA

Gharraf, H. Baess, A.

Faculty of Medicine, Alexandria, EGYPT.

**Introduction:** Obstructive sleep apnea (OSA) is one of the most prevalent diseases worldwide. Diagnosis of OSA is still a dilemma despite our well known disease-related impact on human body health. Under-diagnosis of OSA is still a problem despite the well-established clinical and laboratory criteria of diagnosis. Over-diagnosis may lead to exhaustion of our limited health-care resources. Therefore, an efficient screening tool that is well validated and easily applied, will be an ideal solution for the over or under-diagnosis of OSA. NAMES-BG score was suggested to efficiently screen for OSA depending on neck circumference, airway classification, comorbidities, Epworth sleepiness scale, snoring score, body mass index and gender

**Methods:** The aim of the work was to validate NEMS-BG score in screening of patients with obstructive sleep apnea (OSA). patients and methods. This is a retrospective single center clinical study. Records of patients with documented obstructive sleep apnea were collected. Those records were collected from the database of department of chest diseases in Alexandria Main University Hospital (AMUH). The records of included patients included demographic data, clinical findings, anthropometric measures and polysomnographic records. Statistics were formulated to validate the sensitivity and specificity of this score in our cohort of patients. The significance of the results were at the 5% level of significance.

**Results:** The cutoff value for the composite NAMES tool was calculated at  $\geq 3$  points. In the validation group, NAMES demonstrated similar test characteristics to the Berlin questionnaire, and sensitivity was statistically significantly better than that seen with the Epworth scale. The addition of BMI and gender to the tool improved screening characteristics

**Conclusion:** The NAMES assessment is an effective, inexpensive screening strategy for moderate to severe OSA.

**Support:** no support

## 0613

### THE EFFECTS OF DIABETES ON OBSTRUCTIVE SLEEP APNEA SEVERITY AND PROGRESSION: A PROPENSITY SCORE ANALYSIS

Li, Q.<sup>1</sup> Keenan, B. T.<sup>2</sup> Punjabi, N. M.<sup>3</sup> Maislin, G.<sup>2</sup> Kuna, S. T.<sup>2,4</sup>

<sup>1</sup>Department of Respiratory and Critical Care Medicine, Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, CHINA, <sup>2</sup>Division of Sleep Medicine, Department of Medicine, University of Pennsylvania, Philadelphia, PA, <sup>3</sup>Division of Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, <sup>4</sup>Sleep Medicine Section, Crescenz Veterans Affairs Medical Center, Philadelphia, PA.

**Introduction:** Obstructive sleep apnea (OSA) is associated with increased glucose intolerance and insulin resistance, and commonly coexists with type 2 diabetes mellitus (T2DM). Research suggests an independent association between these two conditions. However, more research into the role of T2DM in the development of OSA, or vice versa, is needed.

**Methods:** Leveraging data from 139 participants with T2DM from the Sleep AHEAD cohort and 5,085 participants without T2DM