

# ORAL APPLIANCE TREATMENT EFFICIENCY IN FUNCTION OF BMI IN 330 OSAHS SUBJECTS

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**Introduction:** The physiologic spectrum of sleep-disordered breathing ranges from partial airway collapse and increased upper-airway resistance manifested as loud snoring and hypopneas to complete airway collapse and episodes of apnea lasting 60 seconds or more. Obstructive sleep apnea/hypopnea syndrome (OSAHS), clinically defined by frequent episodes of apneas and hypopneas and symptoms of functional impairment, can be life-threatening and has been associated with extreme daytime sleepiness, automobile accidents and cardiovascular morbidity and mortality<sup>1</sup>. Reports that snoring is associated with stroke, myocardial infarction, and hypertension suggest that even mild degree of sleep-disordered breathing has negative effects. The estimated prevalence of sleep-disordered breathing among middle-aged adults is 2% for women and 4% for men. Therefore, OSAHS demands effective treatment. Although nasal CPAP is therapeutically effective, its compliance rate is poor for mild to moderate OSA. In addition to behavioral therapeutic measures (weight loss, position training, alcohol avoidance), the use of removable intraoral appliances has become a treatment alternative for OSAS. The authors report the evaluation of daytime sleepiness measure by Epworth Sleepiness Scale (ESS)<sup>2</sup> in 360 OSAHS subjects treated with Mandibular-Lingual Repositioning Device - MLRD<sup>4</sup> and its relation with BMI.

**Methods:** 330 patients (256M/74F), age: avg=46 (28-65/sd=8.18), RDI: avg=38.98 (10.2-103.1/sd=22.43), SatO<sub>2</sub>min.: avg=80.22% (49%-98%/sd=11.23). Two BMI subgroups were created. Group 1 (n=68): BMI=20.13 to 25.00 (avg=23.46), normal group<sup>3</sup>. Group 2 (n=262): BMI=25.02 to 43.25 (avg=29.45), overweight group. ESS was applied before and two months after treatment.

**Results:** See table.

	Group 1 (20<BMI<25)		Group 2 (BMI>25)	
	ESS1	ESS2	ESS1	ESS2
<b>AVG</b>	12.53	5.69	13.60	5.90
<b>SD</b>	4.70	1.90	5.55	2.38
<b>Improvement:</b>		55%		57%

**Discussion:** The difference in the pre and post-treatment ESS scores for all 330 subjects suggests a reduction in the RDI. In Johns' original work, the mean ESS for controls was 5.9 +/-2.2 and their modal was 6. ESS scores significantly distinguished normal individuals from OSA patients and correlated with mean sleep latencies recorded in the MSLT and with the Respiratory Disturbance Index recorded during overnight PSG. In this report, the mean ESS scores for all 330 patients before and 60 days after the MLRD was in use differed in a statistically significant way, but the behavior in both groups was statistically the same .

**Conclusion:** The subjective daytime sleepiness improvement induced by the oral appliance (MLRD) is generated by a probable reduction in the RDI independently of the BMI.

#### **Bibliography:**

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*Current Claim: Dental appliance-induced subjective improvement is generated by a reduction in the RDI .*