

Effect of vertical dimension on efficacy of oral appliance therapy in obstructive sleep apnea

Andrew J. Pitsis, M. Ali Darendeliler, Helen Gotsopoulos, Peter Petocz and Peter A. Cistulli

Am. J. Respir. Crit. Care Med. 2002 Sep 15;166 (6): 860-4

Department of Respiratory Medicine, Centre for Sleep Disorders and Respiratory Failure, St. George Hospital, University of New South Wales, Kogarah; Discipline of Orthodontics, Faculty of Dentistry, University of Sydney; and Department of Mathematical Sciences, University of Technology, Sydney, New South Wales, Australia

The aim of this study was to assess the effect of bite opening induced by a mandibular advancement splint (MAS) on efficacy and side effects in the treatment of obstructive sleep apnea. In a randomized crossover fashion, 23 adult patients received either MAS-1 (4 mm of interincisal opening) or MAS-2 (14 mm of interincisal opening) for 2 weeks, followed by the alternate treatment for 2 weeks, with an intervening 1-week washout. Complete response was defined as a resolution of symptoms and a reduction in apnea/hypopnea index (AHI) to less than 5 per hour. Partial response was defined as improved symptoms and a reduction in AHI of 50% or more, with the AHI remaining at a value of 5 or more per hour. Both MAS-1 and MAS-2 produced similar reductions in mean (\pm SEM) AHI from baseline: 21 ± 2 versus 8 ± 1 /hour and 21 ± 2 versus 10 ± 2 /hour, respectively ($p < 0.001$). Either complete response or partial response occurred in 74 and 61% of patients with MAS-1 and MAS-2, respectively. Subjective improvements were reported with both appliances by the majority of patients. Patients preferred MAS-1 (78 versus 22%, $p = 0.007$). **This study suggests that the amount of bite opening induced by MAS does not have a significant impact on treatment efficacy but does have an impact on patient acceptance.**