



**Physician Fact Sheet** Courtesy of: David Binder, DDS

## **Effectiveness of Oral Appliance Therapy for Obstructive Sleep Apnea to Control Hypertension**

Mandibular repositioning appliances that position the mandible in a forward position can be used as an alternative treatment to CPAP in patients who cannot tolerate CPAP and in those patients who prefer any oral appliance.

### **QuickFacts:**

1. Oral appliances are an effective alternative to CPAP
2. Properly constructed mandibular repositioning appliance will reduce daytime blood pressure.

### **Yoshida K Effect on blood pressure of oral appliance therapy for sleep apnea syndrome.**

In: Int J Prosthodont (2006 Jan-Feb) 19(1):61-6

**PURPOSE:** The aim of this study was to evaluate the effect of individually prescribed oral appliances for the treatment of obstructive sleep apnea syndrome (OSAS) on blood pressure, as well as factors influencing the efficacy. **MATERIALS AND METHODS:** One hundred sixty-one patients (121 men and 40 women, mean age: 54.3 +/- 13.7 years) diagnosed with mild to moderate OSAS (mean apnea-hypopnea index: 17.9 +/- 14.1) were studied before and after insertion of a mandibular advancement device, with a mean interval of 60 days. Systolic, diastolic, and mean blood pressure was taken using an automatic blood pressure monitor (132.0 +/- 16.1 mmHg, 82.1 +/- 10.6 mmHg, 107.1 +/- 12.9 mmHg, respectively, at baseline). **RESULTS:** The patients were subdivided into 3 groups: responder, partial responder, and nonresponder, according to the difference of mean arterial pressure fall after the treatment. The systolic, diastolic, and mean blood pressure decreased significantly ( $P < .001$ ) (127.5 +/- 15.0 mmHg, 79.2 +/- 10.0 mmHg, 103.4 +/- 12.0 mmHg, respectively) after the insertion of the device. The oral appliance therapy produced falls in blood pressure (4.5 mmHg, 3.0 mmHg, 3.7 mmHg, respectively). The response was significantly ( $P < .001$ ) correlated to baseline blood pressure.

The responders ( $n = 70$ , mean blood pressure fall  $> 3.7$  mmHg) and the partial responders ( $n=46$ ,  $0 < \text{fall} < \text{or} = 3.7$  mmHg) showed significantly ( $P < .05$ ; analysis of variance) higher reduction in apnea-hypopnea index (69.6%, 65.9%, respectively) than that (52.5%) of nonresponders ( $n=45$ , fall  $< \text{or} = 0$  mmHg).

**CONCLUSION:** These data suggest that effective oral appliance therapy for OSAS patients with hypertension can lead to a substantial reduction in daytime blood pressure.