Introduction

The purpose of these guidelines is to document the minimum standard of clinical practice required of dental practitioners in the use of an oral mandibular advancement device (MAD) to treat sleep-disordered breathing (SDB). Dentists are the only health practitioners who should supply and fit dental appliances for the treatment of SDB.

SDB encompasses a spectrum of diseases that involve upper airway collapse and obstruction during sleep. This may range from a reduction in airflow commonly associated with snoring to complete upper airway obstruction with periodic cessation of breathing. Cyclical obstructive breathing events involving complete cessation of breathing (apnoea) or partial reduction in breathing (hypopnoea) may result in lowering blood oxygen levels (hypoxaemia) and consequent cortical arousals as breathing resumes. Neurobehavioural consequences include:

- reduced quality of life
- excessive daytime sleepiness
- impaired memory and vigilance
- diminished concentration and decision-making ability
- depression, interpersonal and work relationship difficulties
- increased risk of road, home and workplace accidents

Cardiovascular consequences include:

- hypertension
- left and right heart failure
- coronary artery disease
- stroke

Metabolic consequences include insulin resistance and impaired glucose regulation.

The causes of SDB are multifactorial and can involve both anatomical structural variations, i.e. a small or narrowed airway and abnormal respiratory control mechanisms. The most common modifiable risk factor is obesity, however unfavourable craniofacial structure may also contribute significantly to the causation of snoring and OSAS in all patients regardless of age, gender or weight. Children may also suffer from SDB causing sleep disruption with possible developmental and neurobehavioural consequences.

Protocol for Dental Management of Patients with SDB

1. All patients must be assessed by an appropriately trained sleep physician prior to the fitting of a MAD for treatment of SDB. This should involve an ambulatory or attended sleep study (polysomnogram [PSG]) being performed to assess severity of sleep disordered breathing and other sleep disorders, and to direct patient management.

2. MADs should be fitted by qualified dental practitioners who are trained and experienced in the overall care of oral health, the temporomandibular joint (TMJ), dental occlusion and associated oral structures. In addition, the dental management of patients provided with a MAD for SDB should be performed by practitioners who have undertaken significant training in sleep medicine and/or sleep-related breathing disorders.

3. MAD therapy for SDB requires a multidisciplinary team approach to the initial diagnosis, prescription and the ongoing monitoring of treatment efficacy. The patient’s treating medical practitioner has the primary responsibility for the
Once final adjustments of the MAD have been completed, patients should have follow-up evaluation with both the treating medical and dental practitioners. These visits should occur at regular intervals to ensure the patient’s SDB symptoms are being managed effectively and without undue side effects and to monitor any possible changes in occlusion or the cranio-facial complex. Pre-treatment records such as study models and radiographs should be retained to assist with this purpose.

If SDB treatment using a MAD is medically indicated, the dentist’s role is to provide the device and supervise the patient’s treatment from a dental point of view. This includes:

a. determining if the patient is a suitable candidate for a MAD
b. assessing the patient clinically and selecting the optimal MAD, having regard to its efficacy and potential side-effects for each individual patient
c. prescribing the design and fabrication of the device
d. fitting and adjusting the device
e. providing follow-up care which includes:
   • confirming that the patient is using the device correctly
   • ensuring the device is properly adjusted and not causing discomfort
   • monitoring the health of the oral structures and the integrity of the occlusion
   • assessing if undesirable side effects or complications involving the cranio-facial complex are developing, such as TMJ dysfunction or occlusal changes
   • arranging follow-up visits to occur at regular intervals for the duration of this therapy including any future replacement devices.
   • regular written correspondence with all practitioners involved in the patient’s SDB treatment, in particular the patient’s GP and sleep physician. Correspondence should also be conducted when the patient fails to attend for initial SDB consultations with the treating dental practitioner.

Dentists practising in the field of dental sleep medicine should:

a. follow the recommendations for practice protocol as reported in the most recent American Academy of Sleep Medicine publication Practice Parameters for the Treatment of Snoring and Obstructive Sleep Apnea with Oral Appliances.
b. undertake regular appropriate training and educational activities to ensure their knowledge is up to date in this area. Further details of accredited and approved courses are available from the Australasian Sleep Association (www.sleep.org.au). Dentists interested in practising in this field are encouraged to become associate members of the ASA and to attend and participate in the annual scientific meetings. These conferences will offer postgraduate introductory courses in Oral Sleep Medicine and present current scientific content in all sleep disorders.

References:
4. Joint announcement from the executives of the Thoracic Society of Australia and New Zealand, the Australian Dental Association and the Australasian Sleep Association Guidelines for the use of dental appliances to treat snoring and obstructive sleep apnoea 1998 www.sleep.org.au/mar98.html