

Clinical Description of the SomnoDent® MAS

The SomnoDent® MAS is a unique, sophisticated, Australian designed oral appliance. It has been the subject of numerous stringent, evidence-based studies that demonstrate the SomnoDent® MAS is a safe, effective, comfortable treatment for obstructive sleep apnea (OSA).

The SomnoDent® MAS has a number of design features and benefits, which overcome many of the issues conventionally associated with oral appliances. These include:

- A streamlined design with minimal bulk, which maximizes the size of the lingual space and reduces gagging.
- An excellent fit in both upper and lower arches.
- The unique design provides anterior and posterior contact, which provide a stable occlusion and prevent tooth movement, minimizes temporomandibular joint discomfort and injury caused by bruxing.
- The MAS is constructed in two separate pieces that allow patients to open and close their mouths. This allows clear speech, yawning and drinking without requiring the patient to remove the appliance. The ability to communicate clearly while wearing the device is particularly appreciated by patients and their partners.
- The small form factor of the MAS and absence of an anterior retaining mechanism helps patients sleep with their mouths closed. This minimizes excessive salivation, dribbling, dry mouth and other common side-effects from wearing oral appliances.
- The high-quality fit of the SomnoDent® MAS provides excellent levels of retention. While it is exceptionally durable, its acrylic construction allows it to be easily repaired.
- The device is titratable by patients (if required) and allows for each individual patient's optimal protrusion position to be found: one that is both effective and comfortable.

SomnoDent has an on-going commitment to further research and development to ensure that the SomnoDent® MAS remains a state-of-the-art oral appliance.

EXAMINATION, IMPRESSIONS, BITE REGISTRATION, AND FITTING INSTRUCTIONS FOR THE SomnoDent® MAS

ORAL EXAMINATION

- TMJ & muscle screening
- Range of motion of mandible
 - Maximum opening– calipers
 - Maximum protrusion
 - Record overjet
- Soft tissue screen
 - Uvula size
 - Tonsils
 - Soft palate
 - Tongue size
 - Oral cancer
 - Periodontal
- Hard tissue screen
- OPG & lateral cephalometric recommended
- Orthodontic photographs - optional

ORAL EXAMINATION / CEPHALOMETRIC ANALYSIS

A cephalometric analysis by use of the lateral ceph radiograph is a simple, cost effective tool to help determine the suitability of a patient for a mandibular advancement splint.

Three key measurements:

1. Hyoid bone to mandibular plane (MPH). The normal measurement is 15mm +/- 3mm.
2. Posterior airway space (PAS). The normal measurement is 11mm +/- 1mm. In general, if the MPH is greater than 24mm and the PAS is less than 5 mm, then the patient's suitability for a MAS must be deemed questionable. This must be discussed with the patient.
3. Hyoid bone to the center of the sella turcica (S-H)
 - S-H < 120mm mild/mod OSA recommend MAS
 - S-H > 120mm severe OAS recommend CPAP

TAKING IMPRESSIONS

- Choose a suitable tray
- Use a PVS material
- Fast set
- Get all the extensions and details in particular upper buccal area
- Your best crown impression and denture impression combined

BITE REGISTRATION

- Protrusive bite registration of 60%-80% of maximum protrusion, depending on the patient's range of movement and if there is TMJ and muscular implications.
- The bite registration should be taken with a wax or PVS by George Gauge™. The material needs to be well bonded to the bite fork and extended from anterior to posterior teeth.
- In case of missing posterior teeth (free end saddle), bite should be extended to ensure maximum support.
- Ensure are protrusive position that the skeletal midlines aligned when at protrusive position.
- George Gauge™ recommended.

GEORGE GAUGE™

- The George Gauge™ is an intraoral device used to register jaw position for mandibular repositioning appliances
- Comprising the George Gauge™ are:
 - Maxillary bite forks
 - 2 mm or 5mm thick (recommend 5mm)
 - Lower incisor clamp
 - Body with mm ruler
- We recommend using the 5mm fork as it equates to less changes on articulator during splint fabrication resulting in a better fit.
- If the incisal edge of the central incisor does not touch the bottom of the groove because of crowding or a large cingulum, adjust the palatal portion of the incisal guide and not labially portion.
- Align facial midlines and note any deviations (on lab sheet in area indicated).
- Measure start and finish position the position.
- Ensure an adequate range of movement; 6 mm is the minimal in most patients.

For more information on measuring centric and protrusion, calculating the protrusive position, and taking the bite record, please see the DPS George Gauge™ informational brochure.

FITTING THE SomnoDent® MAS

1. Ease the patient into wearing the appliance. Full first-night compliance may not be appropriate.
2. Ensure that the device is intact and has not been damaged in transit.
3. Place the device in the patient's mouth and check the fit. Always place the upper plate first followed by the lower plate.
4. Proper fit is characterized by:
 - Even contact all around, particularly in the wings and lugs
 - No premature contacts
 - Minimum dislodging forces between the upper and lower plates
 - Adequate retention
 - No rocking or pivoting
 - A generalized tightness, not actively or orthodontically tight

Titration (Adjusting) the SomnoDent® MAS

1. Remove the SomnoDent® MAS from the patient's mouth.
2. Insert the adjustment key in the hole of the titration screw on the upper component of the SomnoDent® MAS. Each quarter turn is 1/10mm.
3. To advance the mandible, use the key to turn the screw in the direction of the arrow marked on the upper component of the SomnoDent® MAS. **Note:** Make sure to advance the device equally on both sides.
4. To reduce advancement, turn the key in the opposite direction to the arrow.
5. When adjusted, place the device in the patient's mouth and check the fit.
6. Preferably, the dentist should do the adjustment in getting the optimal position.
7. Schedule a follow-up appointment for one week later.

Titration Frequently Asked Questions

Q: How much titration should you use when advancing a patient's mandible?

A: The key objective when titrating the SomnoDent® MAS is to advance the patient's mandible the minimum amount that produces positive maximum results. Although initial minor jaw discomfort is expected, you should advance patients in tolerable amounts in order to minimize discomfort. Small adjustments, as little as 0.5mm at a time, are often enough to gain results in some patients, while others are able to tolerate 2mm advancement with no discomfort. This variation in subjective patient tolerance means that titration must be approached case-by-case. **Note: ALWAYS advance both screws by an equal number of turns.**

Questions and Answers continue on the following page

Dental Prosthetic Services

SomnoDent

Q: How far can I adjust the device?

A: The adjustment mechanism allows the mandibular protrusion to be titrated in the range -0.5 to +5.5mm from the preset level. SomnoDent recommends that screws are only advanced up to a maximum +5.0mm (50 winds) beyond the factory preset. Should the adjustment be wound further forward the screw will disengage at +5.5mm (55 winds) and continue to wind without additional forward movement. This is a safety feature designed to ensure components cannot become detached and fall into the mouth.

Q: How many turns of the titration screw does it take to advance the mandible 1mm?

A: One “wind” is considered to be rotation of the screw through 90 degrees. This is the maximum amount of rotation achievable with a single insertion of the device key. The screw on the adjustable device requires 10 winds, in the direction of the arrow, to achieve 1mm of advancement.

Q: What if I forget how far I have wound the screw?

A: ALWAYS maintain records of patient advancement. However, if you are unsure how many winds you have advanced the screw, there is a simple method to recover the original bite setting:

- 1. Gently wind both the screws back (in the opposite direction of the arrow) until you feel a small amount of resistance to further turning. NOTE: DO NOT continue winding past the point where the screws provide resistance as this may damage the screw and/or its housing.**
- 2. At this point, five winds in the direction of the arrow, on both sides of the device, will return the appliance to its original factory preset level.**

SUGGESTED PROTOCOL FOR FOLLOW UP

Follow-up evaluation

- Assess progress
- Change in symptoms
- Compliance
- Side effects
- Change in Epworth Sleepiness Score

Examination

- Fit of appliance
- Occlusal evaluation
- TMJ/muscle evaluation

The next follow-up evaluation will depend on patient’s unique case

BUILDING RELATIONSHIPS

- The SomnoDent® MAS is an oral device which must be issued by a qualified dental practitioner.
- Establishing a professional relationship with your local Sleep Physician and ENT offers physicians and surgeons an appropriate point of contact to refer patients for treatment.
- Dentists can also, where appropriate, screen for potential symptoms. Referring patients for further consultation to a specialist sleep physician for further examination.
- This promotes effective intervention in a problem that affects millions of Americans.
- As a dentist you represent a valuable resource in the treatment and management of OSA and can provide collaborative patient care with physicians.