Snoring and obstructive sleep apnoea (OSA)

Remember:
- All patients can be treated for snoring with a Sleepwell mandibular advancement splint (MAS)
- Even if OSA is suspected, Sleepwell can be provided to help treat the patient's snoring
- OSA referral is simple - complete the tear off part of this questionnaire and give to the patient

Snoring and daytime sleepiness can have a profound impact on quality of life:

- **Daytime sleepiness** - less effectiveness at work and increased risk of accidents
- **Reduced energy** - poor motivation to exercise and weight gain
- **Relationship issues** - sleeping in different bedrooms, reduced sex life and higher stress levels
- **Hypertension** - those who snore or suffer from OSA have an elevated risk of high blood pressure

OSA is a serious condition in which a person stops breathing (or suffers extreme low oxygen levels) whilst asleep. It often occurs in conjunction with snoring.

Patient name: .....

Address: .....

Postcode: .....

Telephone - home: .....

Telephone - mobile: .....

The following questions relate to your lifestyle and general health. Please indicate whether you have suffered with any of the below, providing further details when the answer is yes.

Heart problems Y / N .....

High blood pressure Y / N .....

Diabetes Y / N .....

Thyroid syndrome Y / N .....

Do you take any prescribed medicines? Y / N .....

Please indicate:

Alcohol consumption ..... units/week

Smoking level ..... units/week

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PRE-TREATMENT QUESTIONNAIRE

PLEASE ENSURE THAT THIS FORM IS COMPLETED USING BLACK INK AND IN CAPITALS

PATIENT'S MAIN CONCERNS

Please indicate if you have suffered with any of the conditions below, giving further details when required:

	Circle	Details
Headaches on waking	Y / N	.....
Daytime sleepiness	Y / N	.....
Sleepiness whilst driving	Y / N	.....
Snoring most nights	Y / N	.....
Snorting or gasping during sleep	Y / N	.....

PREVIOUS TREATMENT IN RELATION TO SLEEP DISORDERS

	Circle	Details
Lifestyle change	Y / N	.....
Nasal CPAP	Y / N	.....
Surgery	Y / N	.....
Snorting or gasping during sleep	Y / N	If yes, note AHI score:.....

SLEEPING PARTNER QUESTIONNAIRE (optional, if the partner is present)

Partner's name: .....

Please indicate **your** quality of sleep:

Good ☐ Average ☐ Poor ☐

Please indicate **your partner's** quality of sleep:

Good ☐ Average ☐ Poor ☐

How would you rate the severity of your partner's snoring? Please tick one box only.

No snoring	☐
Mild snoring	☐
Moderate snoring	☐
Loud snoring	☐
Very loud snoring	☐

Does your partner's snoring disturb your sleep? Please tick one box only.

Never	☐
Hardly ever	☐
Sometimes	☐
Usually	☐
Always	☐

FLEMONS ADJUSTED NECK CIRCUMFERENCE

Neck size - not collar (cm)			..... cm
Hypertension	Y / N	if YES, add 4	.....
Habitual snorer	Y / N	if YES, add 3	.....
Choke or gasp most nights	Y / N	if YES, add 3	.....
		Total	**.....**

EPWORTH SLEEPINESS SCALE - TO BE COMPLETED BY THE PATIENT

How likely are you to doze off or fall asleep in the following situations (in contrast to just feeling tired)? Even if you haven't been in some of these situations recently, try to work out how they may affect you. Choose the most appropriate number for each situation:

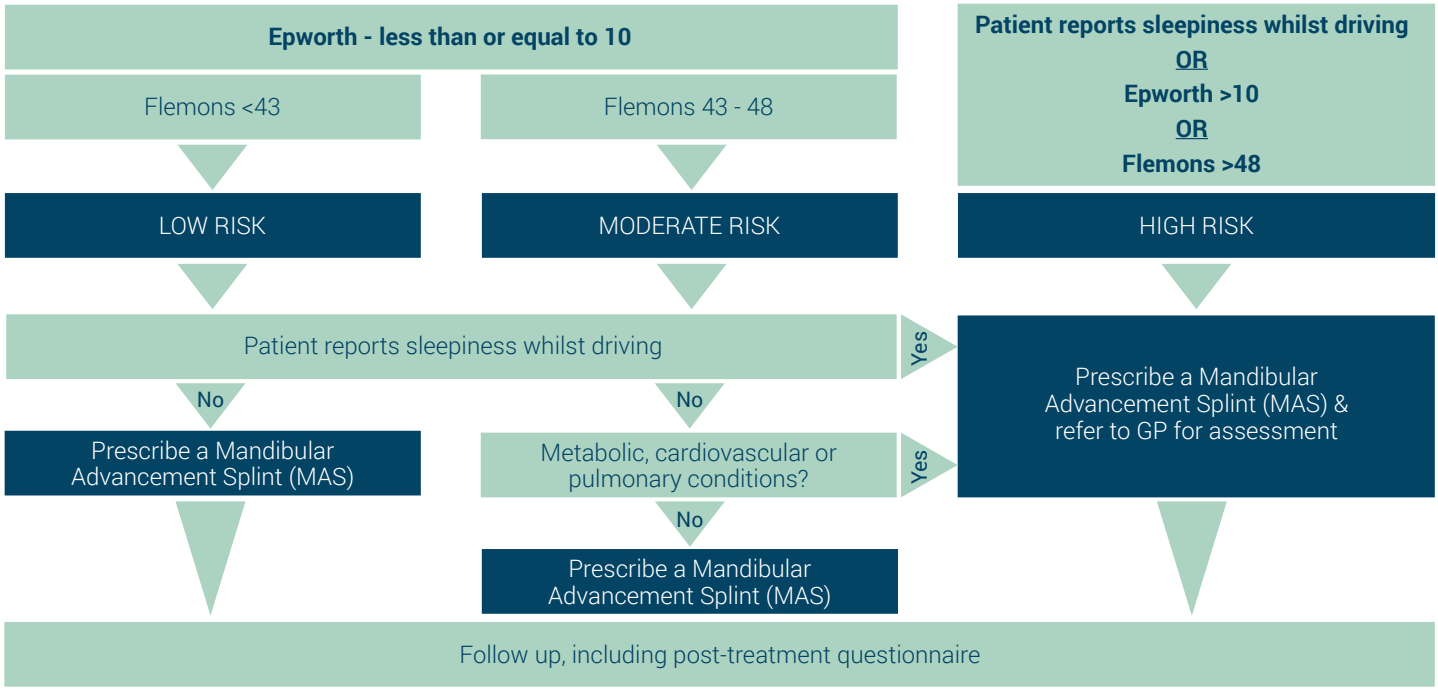
0 - NEVER doze **1** - SLIGHT chance **2** - MODERATE chance **3** - HIGH chance

Sitting and reading	.....
Watching TV	.....
Sitting, inactive in a public place (i.e. theatre, meeting)	.....
As a passenger in a car for an hour, without break	.....
Laying to rest in the afternoon, when circumstances permit	.....
Sitting and talking to someone	.....
Sitting quietly after lunch when NO alcohol has been consumed	.....
In a car, stationary for a few minutes in traffic	.....
Total (0-24)	**.....**

DENTIST USE ONLY - Oral examination

Incisor relationship	Class 1 Class 2 Div I Class 2 Div II Class 3
Overjet	..... mm
Overbite	..... mm
OH/Periodontal condition	Good Fair Poor
Tonsils - enlarged/inflamed	Y / N
Bruxism/clenching/grinding of teeth	Y / N Severe/Not Severe (please note severity on lab ticket)
TMJ assessment:	
Max lateral movements	L ..... mm R ..... mm
Max opening	..... mm
Max protrusion	..... mm
Tenderness to palpitation	Y / N
Pain on mandibular movement	Y / N
Smooth movement	Y / N
Locking and/or luxation	Y / N

CARE PATHWAY: TO DETERMINE PATIENT'S LEVEL OF OSA RISK



PATIENT INFORMATION

Snoring results from a partial closure of the airway during sleep, and most commonly occurs in isolation (simple snoring). Less often, it can take place as part of a more serious condition, OSA, which can be potentially life-threatening. This screening questionnaire has been used by your dental practitioner to help identify your risk of OSA. However, only a sleep physician can diagnose OSA after performing an overnight sleep recording, designed to measure your breathing patterns.

Anti-snoring dental appliances have been shown to play an effective role in the management of patients with snoring and/or OSA.The appliance will not cure the disorder, but works by temporarily repositioning the lower jaw and tongue forwards - keeping the airway open. In order to be effective, the appliance must be worn each night. If the use of the appliance is discontinued, the symptoms will recur. There is no guarantee that an appliance will be effective in every patient, due to individual variation in response. A high standard of oral hygiene is important for a successful outcome, as is the care and use of the device as per supplied instructions.

It is important that you return for assessment after the fitting of your appliance. You will be asked to complete a simple questionnaire, designed to assess your response to treatment and gain feedback from your partner. Whilst this provides valuable feedback, for OSA sufferers, a follow-up overnight sleep recording with Sleepwell in the mouth is the only way to know if your breathing has improved sufficiently.

After wearing the appliance, most patients initially report a degree of drooling, or some patients feel that their teeth do not come together (bite) properly. These are short-term effects and lessen with time. If, however, you awaken with a dry mouth sensation, the fit of the appliance may need adjusting to improve its grip on the teeth. There is a risk that long-term wear can result in a degree of movement in your teeth. It is therefore important that you maintain the health of your teeth, and, most importantly, your gums with regular dental care. Very rarely, the jaw joints may become sore. This is most typically seen in patients with a history of jaw discomfort and/or those who self-adjust their appliances too aggressively. In addition, the splint may require replacement as a result of wear or breakage.

PATIENT CONSENT - LOW/MODERATE RISK OF OBSTRUCTIVE SLEEP APNOEA

I have given complete and accurate replies to the questions within this document, have read the information given to me and understand how Sleepwell, made by S4S (UK) Ltd, may help my snoring and/or sleep apnoea. **I understand that I would need to undergo an overnight sleep study in order to diagnose OSA.**

Patient's name: .....

Patient's signature: .....

Date: .....

Clinician's name: .....

Clinician's signature: .....

Date: .....

PATIENT CONSENT - HIGH RISK OF OBSTRUCTIVE SLEEP APNOEA

I have given complete and accurate replies to the questions within this document, have read the information given to me and understand how Sleepwell, made by S4S (UK) Ltd, may help my snoring. **I understand that I would need to undergo an overnight sleep study in order to diagnose OSA. I have also been made aware of the risk of having OSA and have been advised as follows:**

To visit my GP with a letter provided by the dentist ☐

Patient's name: .....

Patient's signature: .....

Date: .....

Clinician's name: .....

Clinician's signature: .....

Date: .....

DISCLAIMER - The questionnaires being described in this handout have been obtained from published scientific literature. However, we do not endorse their sole use to establish a diagnosis of OSA. It is important to emphasise that the subjective responses upon which these questionnaires rely have the potential to be underestimated by some people. Particular care should be taken in interpreting the results for people whose occupations require high alertness, such as transport drivers. An overnight sleep study would be required to diagnose OSA.

GP REFERRAL

To (GP details):

.....

.....

.....

.....

.....

Date: .....

Dear Dr .....

Patient name: .....

I have assessed the above patient in relation to his/her presentation of snoring. I have provided him/her with a Sleepwell mandibular advancement appliance to address their snoring complaint.

Your patient has collective signs and symptoms of obstructive sleep apnoea (see summary below) and I feel that he/she requires further medical assessment.

Daytime sleepiness (Epworth Sleepiness Score .....) ☐

Reports sleepiness whilst driving ☐

Stops breathing during sleep ☐

Flemons Adjusted Neck Circumference Score: ..... ☐

a) Snorts or gasps during sleep ☐

b) Habitual snoring ☐

Other Comments: .....

.....

.....

On the reverse of this letter is a summary of the Epworth Sleepiness Scale and Flemons Adjusted Neck Circumference. Further information regarding snoring and OSA can be found on the S4S website: www.s4sdental.com.

I would appreciate any feedback regarding the outcomes of further investigation. If I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely,

SNORING & OBSTRUCTIVE SLEEP APNOEA

Snoring and OSA is a serious medical issue. It leads to broken sleep for snorers and their partners, can have a profound impact on quality of life, and can be highly embarrassing.

Daytime sleepiness – Less effectiveness at work and increased risk of accidents

Reduced energy – Poor motivation to exercise, causing weight gain

Relationships – Sleeping in different bedrooms, reduced sex life, and higher stress levels

Hypertension – Patients who snore and have OSA have an elevated risk of high blood pressure

OSA is the term used when a person stops breathing for short periods whilst asleep, before creating a gasp, snort or choking sound. Breathing interruptions, known as 'sleep apnoea', reduce oxygen leves in the blood. During sleep, the brain reacts quickly and releases adrenaline, which causes partial wakening. This cycle can occur many times, interrupting sleep and leading to daytime tiredness.

SCREENING & DIAGNOSIS

The NHS will not treat simple snorers, due to financial constraints, and only 50% of sleep centres provide a comprehensive treatment service for OSA.

SNORING TREATMENT

Mandibular advancement splint therapy (MAS therapy) offers effective treatment for simple snoring and mild to moderate OSA. Continuous Positive Air Pressure (CPAP) should be offered to sufferers of severe OSA.

What is a mandibular advancement splint (MAS therapy)? This is a collective name for mouthpieces which are designed to prevent the lower jaw from dropping back during sleep, in turn reducing the risk of airway narrowing. The narrowing of the airway causes the soft tissue to vibrate, causing the sound of snoring. The role of mandibular advancement splints in the management of snoring is widely recognised (SIGN guidelines, 2003). The most clinically proven and effective mandibular advancement splint is Sleepwell - available from S4S trained dentists. Lower cost, self-diagnosis treatments are called Snoresolve and Snoreshield.

EPWORTH SCALE M.JOHNS Sleep, 1991 Dec; 14(06):540-5

A method for measuring daytime sleepiness: the Epworth sleepiness scale.

Johns MW. Sleep Disorders Unit, Epworth Hospital, Melbourne, Victoria, Australia.

The Epworth sleepiness scale (ESS) is a simple, self-administered questionnaire which is shown to provide a measurement of the subject's general level of daytime sleepiness.

180 adults answered the ESS, including 30 normal men and women as controls and 150 patients with a range of sleep disorders. They rated the chances that they would doze off or fall asleep when in eight different situations, commonly encountered in daily life. Total ESS scores significantly distinguished normal subjects from patients in various diagnostic groups, including OSA, narcolepsy and idiopathic hypersomnia.

ESS scores were significantly correlated with sleep latency measured during the multiple sleep latency test and during overnight polysomnography. In patients with OSA syndrome, ESS scores were significantly correlated with the respiratory disturbance index and the minimum SaO2 recorded overnight. ESS scores showed patients who simply snored did not differ from controls.

ADJUSTED NECK CIRCUMFERENCE (ANC)

W Flemons N Eng J Med Vol 347 No 7 Aug 2003 p.498-504 A Screening Tool for Apnoea Prediction

An adaptation of prediction rule 12, based on neck circumference, can be used to estimate a patient's probability of having a sleep test result that is diagnostic of sleep apnoea. Neck circumference (measured in centimetres) is adjusted if the patient has hypertension (4cm in added), is a habitual snorer (3cm is added), or is reported to choke or gasp most nights (3cm is added).

A low clinical probability corresponds to an adjusted neck circumference of less than 43cm, an intermediate probability (4 to 8 times as probable as a low probability) to a neck circumference of 43 to 48 cm, and a high probability (20 times as probable) to a neck circumference of more than 48cm. Together with the consideration of the severity of symptoms, the clinical probability estimate helps guide management.

12 Flemons WW, Whitelaw WA, Brant R, Remmers JE, Likelihood ratios for a sleep apnoea clinical prediction rule. Am J Respit Crit Care Med 1994; 150:1279-1285 (Abstract).