

Questionnaire:

This questionnaire has been designed to determine the potential suitability of a Silensor-sl to reduce snoring and obstructive sleep apnea.

It may be useful to have the patient discuss the questions with his or her partner.

The questionnaire does not claim to be complete. Mostly the results shown can only be considered as tendency.

Further steps for finding results are perhaps necessary.

Your name: _____

Your weight: _____

Your address: _____

Your size: _____

Your phone no.: _____

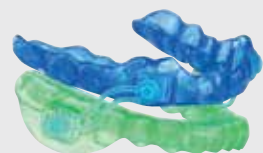
BMI*:

*body-mass-index: body weight divided by the square of the body size:
$$\frac{\text{body weight (kg)}}{\text{body size} \times \text{body size (m)}}$$

Do you feel stiffness in the area of the temporomandibular (jaw) joints?

Do your facial muscles feel strained or tense in the morning?

Do you grind or clench your teeth?



Do you also snore on the side?

Do you snore every night?

Do you snore noisily?

Do you feel tired on waking up?

Do you sleep fitfully, is your bed crumpled in the morning?

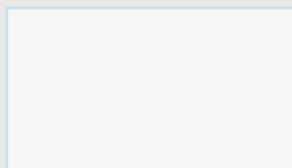
Do you wake up with headache?

Do you have problems concentrating for long periods?

Does sleep suddenly overcome you during the day?

Do you snore noisily with irregular interruptions?

Does your breathing stop (apneas) at any time during sleep?



no **sometimes**

often **yes**

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If your dentist confirms these findings a Silensor-sl can be used.

A Silensor-sl can only be used after successful therapy.

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Presumably you only suffer from primary snoring without impairment of your health. The Silensor-sl can be fabricated in the normal bite situation.

Presumably you suffer from a rhonchopathy or even of an obstructive sleep apnea. The Silensor-sl has to keep your lower jaw in an advanced position.

Upon suspicion of a sleep apnea a specialist in sleep medicine has to be additionally consulted.

Do you snore ...?

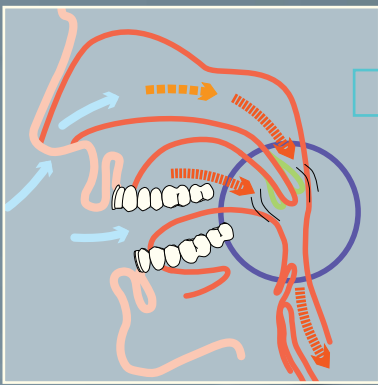
Silensor-sl

P.72-3109-2

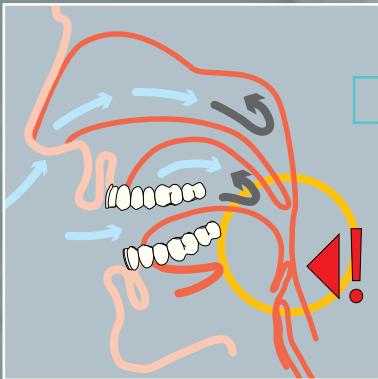


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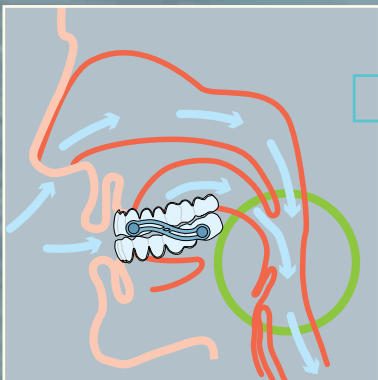
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Snoring



Apnea



Silensor-sl

Snoring:

Up to 40 % of the population in industrialized countries snore. The decreasing muscle tone during the sleep causes a narrowing of the upper respiratory tract. This narrowing accelerates the respiratory airflow, thereby various structures in the area of the upper respiratory tract start to vibrate and cause the snoring noise. So snoring is a mechanical process that can be counteracted mechanically. Here the dental therapy comes into action. Light or primary snoring do not have consequences on health whereas the rhonchopathy, the abnormal snoring, does.

The apnea, the respiratory arrest during sleep:

Sleep apnea is, at a certain level of severity, a **serious disease** that may cause not only sleepiness during the day but also serious systemic diseases.

The apnea is a total respiratory stop. The **obstructive apnea** is a complete occlusion of the respiratory tract whereas in case of the **central apnea** the central respiratory reflex arrests. The **hypopnea** is a reduction of the respiratory flow by more than 50 %.

The apnea/hypopnea index, AHI is the degree of the severity of the disease. An apnea/hypopnea lasts at least 10 sec. The apneas per hour sleep are counted, 10 apneas per hour result in an index of 10. An index of 0 to 5 is normal, 5 to 10 is a light, 10 to 20 a median range and more than 20 a severe disease.

An obstructive apnea is characterized by an interruption of the very noisy snoring (rhonchopathy).

The central apnea, however, has no external signs.

Intense sweating during the night, frequent nocturnal urination and a dry mouth can be indications for an obstructive sleep apnea (OSA) and an upper airway resistance syndrome (UARS).

The effectiveness of the Silensor-sl:

The Silensor-sl consists of one transparent splint for the upper jaw and one for the lower jaw. The lower jaw is either held in a predetermined position or advanced by 2 connectors that are fixed laterally to the splint. The Silensor-sl thus counteracts the narrowing of the respiratory tracts. The velocity of the inspired air decreases and so do noise-generating vibrations of soft tissues. With the Silensor-sl jaw movements are possible but no falling back of the lower jaw. With this function the Silensor-sl is a comfortable and at the same time effective snoreguard. Clinical tests¹⁻⁶ have shown that the advancement of the lower jaw considerably reduces snoring at more than 80 % of the patients and may reduce the apnea index at up to 50 %.

1 - 6
Oral appliances for snoring and obstructive sleep apnea: a review, Ferguson, Cartwright, Rogers, Schmid-Novara Sleep, Vol. 29, No. 2, 2006

Oral appliance therapy for the management of sleep disordered breathing: an overview, Robert T. Rogers, D.M.D. Sleep and Breathing, Vol. 4, No. 2, 2000

Dental considerations in upper airway sleep disorders: a review of the literature, Ivanhoe, Cibirka, Lefebvre, Parr The Journal of Prosthetic Dentistry, Dec. 1999, 685

Mandibular advancement splints and CPAP in patients with obstructive sleep apnoea: a randomized cross over trial L'Estrange, Luo, Smith, Grant, Simonds, Spiro, Battagel European Journal of Orthodontics 24 (2002) 239-249

Mandibular advancement and sleep disordered breathing Clark, Kobayashi, Freymiller • CDA Journal, April 1996

Dentistry's role in the diagnosis and co-management of patients with sleep apnoea syndrome A. H. Friedlander, I. K. Friedlander, M.A. Pogrel British Dental Journal, Vol. 189, No. 2, July 22, 2000

When is the Silensor-sl suitable?

The Silensor-sl can be expected to be very successful since in almost all cases the noise involved in snoring is caused by constriction of the airways. Because of its compact design, the device does not inhibit breathing through the mouth.

With severe corpulence a good success of the treating, however, is doubtful. The effectiveness will thus be increasingly reduced at a BMI (body-mass-index) of more than 30. The Silensor-sl cannot be used with edentulous patients and should only be fixed to a partial denture which has adequate retention. It is up to the dentist to assess whether or not residual teeth provide enough retention.

If a sleep apnea is suspected, the efficacy of the Silensor-sl should be assessed in a sleep laboratory considering the seriousness of this disease.

Hints for wearing the Silensor-sl:

Upon insertion of the Silensor-sl the patient may experience some tension. This will disappear normally in a short time.

Side effects:

If the wearer of the Silensor-sl should realize tooth migration his practitioner has to be informed of it as quickly as possible. The dentist will then decide if the appliance can further be worn.

After removal of the splint the patient feels more or less considerably a changed bite situation - the mandible feels slightly out of alignment. This condition will disappear in a short time and will have no consequences according to several tests.

In the beginning of the Silensor-sl therapy there will often be increased salivation. This will, however, generally soon decrease again.