

# RADIOFREQUENCY OF THE SOFT PALATE AND THE NASAL TURBINATES, A NEW TREND IN ENT

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In the search for surgical methods with a less traumatizing tissue effect, many doctors, physiologists and engineers in general ENT practice are always looking for operative techniques which can improve patients' comfort and safety and even the outcome for patients. Since the introduction of radiofrequency technology there has been a constant development and improvement of the materials and methods which are now at our disposition. Radiofrequency has become a commonly used technology in ENT mainly in sleep surgery. Radiofrequency volumetric tissue reduction (RaVoR™) has been reported to be a successful treatment with less morbidity for patients with hypertrophic inferior turbinates and for the soft palate of patients with snoring and/or mild obstructive sleep apnea (OSA).

**Soft palate:** Snoring and/or mild OSA is often caused by excess tissue in the oropharynx. Most of the time snoring does not disturb the patient so much, but is rather annoying for his/her bed partner. Mild OSA might lead to a lack of sleep, daily sleepiness, high blood pressure, bad temper, acratia and sometimes even partial hearing loss in the high-frequency range.

All these symptoms can put relationships under stress. Our patients with a positive anamnesis of snoring and/or OSA undergo a full clinical evaluation with flexible endoscopy of the nose, oropharynx, hypopharynx and larynx. Only if there is a positive or suspect anamnesis for apnea, polysomnography is scheduled. Snorers or mild OSA-patients not suitable for CPAP and with a collapse of the soft palate are selected for radiofrequency treatment. Exclusion criteria are a BMI > 30 and enlarged tonsils.

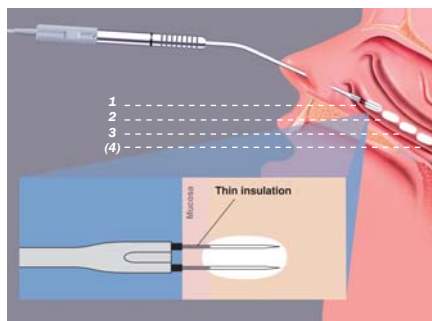
In our out-patient clinic the 4 MHz RF generator CURIS® (Sutter, Freiburg/Germany) is used for the intervention under short general anesthesia. General anesthesia has the advantage of not causing dysphagia. There is no need for infiltration of local anesthetics. It is a fast procedure involving no pain and offering improved comfort for patients. The reusable bipolar probe for the soft palate is used in the RaVoR™ mode (*in this mode the AutoStop function of the system ensures the automatic power cut-off when the tissue is fully coagulated*) with Audio Feedback (an acoustic signal when the power is cut off). The intensity of power varies from 10-12 watts depending on the size of the soft palate: the bigger, the more energy. Three insertions in the soft palate are made (Fig. 1). After a few hours patients can leave the hospital again on their own. If necessary, only oral pain-killers are prescribed for one week. One day after surgery, patients can already resume their normal activities. Post-operative examination is scheduled one week and 6



**Fig. 1:** Insertion in the soft palate and puncture sites with bipolar RF probe (REF 70 04 95)

weeks after surgery when an anamnestic and clinical evaluation is performed.

**Nasal turbinates:** In many patients the inferior nasal turbinates are enlarged and do not respond to conservative medical treatment. Miscellaneous causes may be responsible for nasal blocking, which may lead to lack of sleep, dry mouth and habitual snoring. Allergic, non-allergic and iatrogenic rhinitis can also lead to a hypertrophy of the inferior nasal turbinates, even after correct medical treatment. In case of persistent hypertrophy, a reduction of the tissue volume is indicated. In the past a number of different techniques were used to reduce the turbinates' volume, such as partial conchectomy, coagulation, cryotherapy and shaver-reduction. In our opinion, some are too aggressive and lead to longtime crusting of the mucosa while others are not sufficient and still leave the nose partially blocked.



**Fig. 2:** Nasal turbinate puncture sites with schematic view of the inserted probe (REF 70 04 62)

Today, we are using bipolar radiofrequency volume reduction (RaVoR™) as an easy and safe procedure with very few side effects for the patient. When using RaVoR™ together with Audio Feedback we achieve excellent volume reduction of the inferior turbinates. Our patients with persistent nasal blockage are examined clinically and undergo nasal endoscopy and skin allergy testing if indicated. Under short general anesthesia each turbinate is injected with 4-5 cc saline solution to achieve a mild swelling that facilitates the insertion of the specially designed RaVoR™ probe. Ten watts are applied while 3-4 insertions are made (Fig. 2). Post-operative treatment is the same as for the soft palate. Patients have no complaints post-operatively, and we see no crusting.

**Discussion:** Bipolar radiofrequency treatment of the soft palate and the inferior turbinates has become a common tool in general



**Fig. 3:** CURIS® RF unit (Sutter, Germany)

ENT-practice. The probes by Sutter are user-friendly and easy to insert in the mucosa. Since they are reusable, the entire procedure is very cost-efficient. The patient outcome is very satisfactory with almost no side effects, even after general anesthesia. Of course this treatment can also be performed under local anesthesia. Combination treatment of the soft palate and the inferior turbinates has proven to be a comfortable method for the patients and the surgeon. We may safely conclude that the development of bipolar radiofrequency instruments has improved the treatment options for soft palate and turbinates in snoring and/or OSA without undue damage to surrounding tissue, thus preserving the treated structures in their physiological condition.



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**References:** 1. RF surgery for the treatment of obstructive sleep apnea: Short-term and long-term results; Chantapant S, Neruntarat C; Otolaryngology - Head and Neck Surgery 141 (6), 722-726 (Dec 2009) 2. RF surgery of the soft palate in the treatment of mild obstructive sleep apnea is not effective as a single-stage procedure: A randomized single-blinded placebo-controlled trial; Bäck LJ, et. al.; The Laryngoscope (Jun 2009) 3. Intranasal steroids or radiofrequency turbinioplasty in persistent allergic rhinitis: effects on quality of life and objective parameters; Gunhan K, et. al.; European Archives of Oto-Rhino-Laryngology (Dec 2010) 4. RF inferior turbinate reduction: An evaluation of olfactory and respiratory function; Garzaro M, et. al.; Otolaryngology - Head and Neck Surgery 143 (3), 348-352 (Sep 2010) 5. Long-term Results of RF Turbinioplasty for Allergic Rhinitis Refractory to Medical Therapy; Lin HC, et. al.; Archives of Otolaryngology - Head and Neck Surgery (Jul 2010)

# Featured Product



1:1

## 700495 – Bipolar needle electrode "Marinescu" for the soft palate

Qty.	REF	Description
1	700495	Bipolar needle electrode „Marinescu“ for the soft palate with protective insulation



1:1

## 700462 – Bipolar needle electrode "Binner" for nasal turbinates

Qty.	REF	Description
1	700462	Bipolar needle electrode "Binner" for nasal turbinates, with protective insulation



## 870010 – CURIS® basic set with single-use patient plates

Qty.	REF	Description
1	360100-01	CURIS® radiofrequency generator (incl. mains cord, user's manual and test protocol)
1	360110	Footswitch two pedals for CURIS® (cut & coag), 4 m cable
1	370154L	Bipolar cable for CURIS®, length 3 m
1	360704	Monopolar handpiece (pencil) cut & coag, shaft 2.4 mm, cable 3 m
1	360238	Cable for single use patient plates, length 3 m
1 (x50)	360222	Safety patient plates, single use, packing 5 x 10 pcs. (not shown)

### \*Optional model

CURIS® basic set with re-usable patient plate (REF 870020)



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