What happens to taste and smell senses after total laryngectomy?


Smell and taste deteriorate after total laryngectomy, secondary to lack of passive airflow to the the and thereby odor stimulation to the olfactory epithelium. Taste also suffers because although the tastebuds themselves are not affected the important component smell plays in flavor particularly the retronasal stimulation required for full range of flavor in such things as chocolate, coffee, team meat.

The following article: Screenig and rehabilitation of Olfaction After total laryngectomy in Swedish patients, Risberg-berlin et al

Describes the use of Nasal airflow-inducing maneuvers as an intervention to improve nasal airflow and thereby smell and taste.

This technique originally described by Hilgers et al is also known as the polite yawn works by creating a negative pressure in the oral cavity and oropharynx to induce nasal airflow, thus enabling odorous substances to reach olfactory epithelium. The patient is instructed to make an extended yawning movement while keeping their lips closed and simultaneously lowering their jaw, floor of mouth, tongue, base of tongue, and soft palate. Apparently this technique is easily mastered by the patient but has to be repeated frequently to increase its efficacy.

This study used an Scandinavian odor identification test (SOIT) for testing (has a 16 item stimuli with 4 responses with scandinavian specific odors)

24 TL pts were tested pre-intervention with SOIT and questionnaire on olfaction, taste and appetite, then underwent a SLP training session with the NAIM technique, three interventions were given in 6 weeks. QOL measure were also surveyed.

Pre-treatment 10pts were smellers (though 4 hyposmic), while 14 were anosmic. After intervention of the 18pts with impaired smelling 72% had improved smelling, of the non-smellers 50% converted to smellers with only one session.

Did not measure taste, but those who became smellers reported an improved appetite and taste on surveys, as well as overall improved QOL after intervention if they were able to improve their taste.

How does septoplasty and turbinate reduction influence olfaction?


Could not access above article but the following: Assessment of olfactory function after septoplasty: a longitudinal study Pfaar, huttenbrink, and Hummel, smell and taste 2004

They looked at lateralized olfactory function in 30pts who underwent septoplasty. They performed smell measurements pre-op, 4, 9 months post-op.

Prior to Surgery overall they found significantly higher odor thresholds in the obstructed nostril when compared to contralateral thresholds using “sniffin sticks”. No pts were found to be anosmic.

Post-operatively there was a significant decline in odor discrimination compared to pre-op which recovered at 9months. However at 9months there was no change in odor thresholds and odor identification function.
The difference between odor thresholds between obstructed and non-obstructed sides disappeared during the post-operative observation period, thought to be related to relief of nasal obstruction of the operated side.

Commented that in the Damm study in 2003 they discovered that 9 weeks after surgery septoturbinoplasty improved olfactory function. 80% improvement in odor identification, discrim in 70% and odor thresholds in 54%.

Previous studies have shown no change in olfaction after middle turbinoplasty.

What is the impact of unilateral/bilateral chorda tympani lesions?

9. What is the impact of unilateral/bilateral chorda tympani lesions?


Study of bilateral and unilateral chorda tympan sections, found that few patients are aware of any change in taste discrimination following unilateral chorda tympani section because taste is still perceived via the normal taste buds on the healthy side and the posterior one third of the tongue. Following bilateral chorda tympani section patients almost invariably are aware of loss of taste. All patients had elevated electrogustometric taste detection thresholds on the lesioned side and limited chemical taste recognition and detection.