

**Title:**

Nervus Intermedius Outcomes after Vestibular Schwannoma Surgery and Radiosurgery: A Single Institution Experience

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**Abstract:**

**Background:** Nervus intermedius (NI) outcomes are under reported in the management of vestibular schwannoma. Post treatment deficit can lead to considerable morbidity and patient dissatisfaction.

**Objective:** To present NI outcomes in our series of patients who have undergone all treatment modalities for vestibular schwannoma and a review of the existing literature.

**Methods:** We performed a retrospective review of all patients with vestibular schwannoma who were treated at our institution between January 1, 2008 and December 31, 2018. Demographic data were collected, in addition to tumor size, Koos grade, treatment modality, extent of resection (EOR), postoperative facial nerve function and hearing function. NI outcomes were determined from phone interview using a pre-existing functional questionnaire.

**Results:** 98 patients responded to the questionnaire and were included within this study. Patients were stratified into three groups: Group 1 included 54 patients who underwent radiation, Group 2 with 27

patients who underwent surgical treatment, and Group 3 with 17 patients who underwent both radiation and surgery. Twenty-eight percent of patients presented with pre-operative NI dysfunction; most commonly dry eye followed by taste dysfunction and dysfunction with lacrimation (crocodile tears). Following treatment, 79% of patients experienced NI dysfunction most commonly dry eye. Statistical differences in dry eye and taste were observed when comparing the treatment groups.

**Conclusion:** NI dysfunction is common following treatment for VS and is more prevalent in the surgical group compared to radiosurgery. NI dysfunction should be included in patient pretreatment counseling as it may impact treatment choice and quality of life.