

## ENT Summer Research Project Posting

### Project Title: **Audiological Patterns and Outcomes in Sudden Sensorineural Hearing Loss (SSNHL) Patients**

#### Description of Project:

Sudden sensorineural hearing loss (SSNHL) is an unexplained acute sensorineural hearing loss of greater than 30 dB averaged over a minimum of three pure-tone audiogram test frequencies, occurring within 72 hours of onset. The majority of cases are idiopathic, with only 10-15% of cases having an identifiable cause of hearing loss.

Mild hearing loss patients are more likely to achieve a full recovery, whereas severe hearing losses seldom show recovery. Prognosis is worse for older patients and patients with associated vestibular symptoms. Previous studies have utilized audiometric data, including audiogram patterns, averaged pure tone audiogram (PTA), speech recognition threshold (SRT) and word recognition scores (WRS) to quantify audiometric outcomes following SSNHL.

Although SSNHL can occur at any age, the incidence increases with age. Therefore, our group hypothesizes a relationship between SSNHL and age-related hearing loss (i.e. presbycusis). Presbycusis has been classified into subtypes of cochlear, strial, neural, and sensory determined by histologic and audiologic findings. This study aims to classify SSNHL patients into similar subtypes using their PTA and WRS and SRT scores by adapting the presbycusis classification system.

Patients response to treatment will be based on their 6-month follow-up audiometric findings. The data will be interrogated to identify if there are differences in hearing outcome based on the presenting SSNHL audiometric subtype. The SSNHL classification system will be validated for inter- and intra-rater reliability. The feasibility of utilising this classification system to predict hearing recovery in SSNHL patients will be determined.

#### Student's Role in the Project:

The student will work under the supervision of the Principal Investigator in collaboration with other members of the research team. The student will be involved in a retrospective chart review of patients that have presented to Vancouver General Hospital with SSNHL between years 2013-2018. The student will learn the conduct of a retrospective study, extracting pertinent clinical information from patient charts, assessing audiograms, maintaining a patient database, and performing data analysis. The results of this study will be presented at local, national, and international meetings in which the student is encouraged to participate. The student will also be involved in manuscript preparation.

Does this project require ethics approval? (Yes or No) Yes – ethics approval has been granted

#### What are the plans for research funding?

- a) Apply for UBC Faculty of Medicine Summer Student Research Program (1<sup>st</sup> and 3<sup>rd</sup> years – Deadline Feb 15, 2019)

<https://www.med.ubc.ca/current-learners/summer-student-research-program/>

Research Location: Vancouver General Hospital

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