**Description:**
Sensorineural hearing loss of greater than 30 dB over 3 contiguous pure-tone frequencies occurring within a 3-day period without an identifiable cause.

**Red Flags:**
- Sudden sensorineural hearing loss (SSNHL) is a diagnosis of exclusion
- Consider herpes zoster oticus if pain or vesicles of pinna/ear canal present

**How to Assess:**

**History:**
- Sudden onset of painless, unilateral hearing loss, generally noticed on waking
- Associated with unilateral tinnitus in 70% of cases
- Associated with mild disequilibrium in 40-50% of cases
- Absence of otorrhoea, otalgia, headache, neurological symptoms, vesicles involving the pinna and/or ear canal

**Examination:**
- Normal ear canal and tympanic membranes
- Rinne positive tuning fork test (air conduction>bone conduction) in mild/moderate hearing loss and false Rinne negative (bone conduction>air conduction due to sound conduction via the cranium being heard by the non-test ear) in severe/profound loss. Weber’s test lateralisises to the non-affected ear. If a tuning fork is not available, the Hum Weber may be used. In this test, if the patient hums, the sound will often be heard in the non-affected ear in cases with SSNHL and in the affected ear in cases with conductive hearing loss.
- Whisper-voice testing confirms loss
- No cranial nerve abnormality
- No stigmata of autoimmune disease

**Investigations:**
- Audiogram required on the same day or next working day showing SSNHL of at least 30 dB in three frequencies with onset over less than 3 days.
Acute Management:

- If not contraindicated, prescribe prednisolone 1mg/kg/d orally up to 75 mg daily for seven days then taper over one week
- Prednisolone may be commenced for cases presenting within 28 days of the initial sudden hearing loss
- Prednisolone can be commenced empirically if audiogram not available on the same day – confirm hearing loss with audiogram and review appointment next working day
- Commencement of prednisolone should occur following patient education regarding SSNHL
- If oral corticosteroids are contraindicated, intra-tympanic (IT) steroid injection would be indicated (see Appendix 1)
- There is no evidence for antiviral therapy in SSNHL
- Refer urgently to neurologist if other focal neurological abnormalities present

Follow up:

- Arrange:
  - If case presenting within 28 days of the initial sudden hearing loss, refer to injection clinic using AENT appointment referral in one week
  - if case presenting more than 28 days of the initial sudden hearing loss, refer to Otology clinic within 6 weeks with repeat audiogram
- Arrange MRI to exclude a tumor of internal auditory canal - this should be followed up in Otology Outpatient Clinic within 2 months

Discharge instructions:

- Discuss potential side-effects of short-term corticosteroid course and patient education discussion points for SSNHL (see Appendix 2)
- Give patient copy of Sudden Sensorineural Hearing Loss Patient Information
Appendix 1:

Intra-tympanic (IT) steroids injection for sudden onset sensorineural hearing loss (SSNHL) Protocol

Patient consent: written consent should be taken

- Chance of failure of treatment
- Risk of dizziness/ tinnitus/ ear fullness
- Persistent tympanic membrane perforation (TMP)
- Water precaution for a week

Administration of IT Dexamethasone

- Apply topical anesthetic to the eardrum and wait for 20 minutes. Remove topical anesthetic completely. Do not use phenol
- Prepare Dexamethasone warm up to body temperature
- Instill solution to middle ear in the inferior quadrants with 25G/spinal needle (0.4-0.8 ml) under microscopic guidance.
- Let patient lie in a supine position with affected ear up for 15-30 minutes.
- Patient should be instructed to avoid excessive swallowing

Patient instructions

- Water precautions
- Report any change of hearing/vertigo

Follow up

Audiometry in one week after last injection and review in injection clinic

Reference


Appendix 2:

Patient Education Discussion Points for Sudden Sensorineural Hearing Loss (SSNHL):

(From Robert J. Stachler et al Otolaryngology -- Head and Neck Surgery 2012 146: S1)

The cause of sudden sensorineural hearing loss (SSNHL) is often not readily apparent and thus called idiopathic. It rarely affects both ears and can be associated with other symptoms such as tinnitus, vertigo, and fullness in the ear.

Approximately one-third to two-thirds of patients with SSNHL may recover some percentage of their hearing within 2 weeks. Those who recover half of their hearing in the first 2 weeks have a better prognosis. Patients with minimal change within the first 2 weeks are unlikely to show significant recovery.

Early recognition of SSNHL is important. Although there is a lack of evidence-based research, it is generally accepted that early intervention may increase recovery.

Many treatments have been proposed for SSNHL, but research about their effects is limited by small sample size and varying experimental designs. The benefits of therapy may include more prompt and complete recovery of hearing, but side effects also must be considered when choosing among the available options.

Watchful waiting is an alternative to active treatment as between one-third and two-thirds of patients may recover hearing on their own and can be monitored with repeat hearing tests.

Sudden hearing loss can be frightening and may result in embarrassment, frustration, anxiety, insecurity, loneliness, depression and social isolation. Individual or group counselling can be helpful in supporting patients with SSNHL.

Audiologic rehabilitation needs to be addressed as soon as the hearing loss is identified. This includes counselling and discussion of non-surgical and surgical amplification and hearing restoration options.
## Evidence Table

<table>
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<th>Author(s)</th>
<th>Title</th>
<th>Source</th>
<th>Level of Evidence (I – VII)</th>
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<tr>
<td>Benjamin PC Wei et al</td>
<td>Steroids for idiopathic sudden sensorineural hearing loss</td>
<td>Cochrane Database of Systematic Reviews 2013 Issue 7. Art. No.: CD003998</td>
<td>I</td>
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## The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynk and Fineout-Overholt (2011).

I) Evidence obtained from a systematic review of all relevant randomised control trials.
II) Evidence obtained from at least one well designed randomised control trial.
III) Evidence obtained from well-designed controlled trials without randomisation.
IV) Evidence obtained from well-designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case series.
V) Evidence obtained from systematic reviews of descriptive and qualitative studies.
VI) Evidence obtained from single descriptive and qualitative studies.
VII) Expert opinion from clinician, authorities and/or reports of expert committees or based on physiology.
### Version Details:

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                     • ENT Fellow  
                     • ENT Consultant  
                     • ENT Medical Officer |
| National Standard: | Comprehensive Care |
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