Royal College of General Practitioners

DEAFNESS AND HEARING LOSS IN PRIMARY CARE

RCGP Deafness and Hearing Loss Spotlight Project

www.rcgp.org.uk/hearingloss

Facts and Figures Quiz

- What percentage of GP consultations are ENT related?
- How many people in the UK have hearing loss?
- How many people worldwide have disabling hearing loss?
- How long on average do people wait before seeking help for hearing loss?
- What is the % failure rate of referring people who present with hearing loss to GP services?
- How many people in the UK are hearing aid users?

Quiz Answers

- Eight out of every 14 consultations in primary care relate to ENT (ENT New Vol 24 No 5 Nov/Dec 2015)
- 12 million people in the UK have hearing loss, that's in one in six people. By 2035, this will increase to 15.6 million people making that 1 in 5 people in the UK affected by hearing loss.
- Around 466 million people worldwide have disabling hearing loss, and 34 million of these are children.
- Evidence suggests that people wait on average 10 years before seeking help for their hearing loss and when they do, GPs fail to refer 30-45% to NHS audiology services.
- Two million people in the UK are hearing aid users and six million people could benefit from one

Is Your GP Practice Hearing Friendly?

Sign your GP Surgery up to the RCGP Hearing Friendly Practice Charter.

https://youtu.be/GIjqvP6eekw

Find out more on www.rcgp.org.uk/hearingloss

Terminology

- **Deafened** – people who were born with hearing and have lost most or all their hearing later in life
- **Hard of hearing** – people who have lost some but not all hearing
- **deaf (lower case ‘d’)** – people who have hearing loss, whether at birth or acquired later through injury, disease or associated with ageing. They may communicate orally and may also be users of sign language
- **Deaf (upper case ‘D’)** refers to deaf individuals who identify as being part of the Deaf community and who communicate almost exclusively with sign language
- **Hearing impaired** – anyone with any level of hearing loss

Legislation

- There are legal requirements around disability rights and access
- **Accessible Information Standard (AIS)**
  - CQC inspects GP Practices
- **Equality Act 2010**
  - Reasonable Adjustments

Communication Tips

https://www.youtube.com/watch?v=n1jLkYyODsc

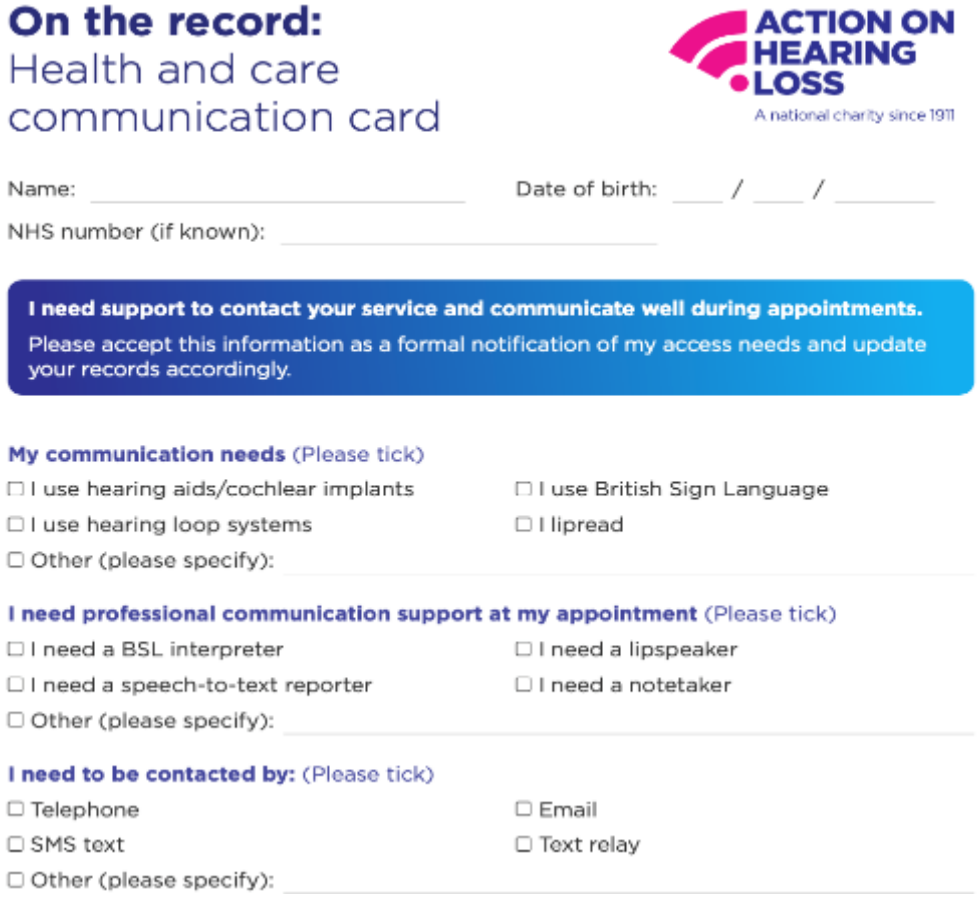
Communication Tips

Communication tips continued:

1. Gain the **person's attention** before you begin to speak
2. Avoid speaking from another room. Place yourself at a **reasonable distance** so they can see your face and lips
3. Avoid having the conversation with a lot of **background noise**. Remember hearing aids will amplify all background noise, so speech can get lost.
4. Keep your **face well lit**. Do not stand with the light or a window behind you as your face will be in a shadow
5. Do **not cover your face or your lip** movements
6. Do **not look away** when talking
7. Do **not shout**! Speak clearly and not too fast or too slow
8. Repeat the sentence again (just once) if necessary, then rephrase
9. W**rite down** important facts - times, dates, names, places, instructions
10. Be **calm and patient** and leave enough time for the consultation
11. G**estures** and **facial expressions** will help augment your message

Practical Tips For your GP Surgery

- **On the record communication card**
- RCGP Hearing Friendly Practice **Charter**
- **Speech to Text apps**
- **Deaf awareness** training – RCGP Accredited
- **InterpreterNow** - https://vimeo.com/223750677
- **Personal listening device**
- **Telecoil** System
- **Consultations**



On the record:
Health and care communication card

ACTION ON HEARING LOSS
A national charity since 1911

Name: _____ Date of birth: ___ / ___ / _____

NHS number (if known): _____

I need support to contact your service and communicate well during appointments.
Please accept this information as a formal notification of my access needs and update your records accordingly.

My communication needs (Please tick)

- ☐ I use hearing aids/cochlear implants
- ☐ I use British Sign Language
- ☐ I use hearing loop systems
- ☐ I lipread
- ☐ Other (please specify): _____

I need professional communication support at my appointment (Please tick)

- ☐ I need a BSL interpreter
- ☐ I need a lipspeaker
- ☐ I need a speech-to-text reporter
- ☐ I need a notetaker
- ☐ Other (please specify): _____

I need to be contacted by: (Please tick)

- ☐ Telephone
- ☐ Email
- ☐ SMS text
- ☐ Text relay
- ☐ Other (please specify): _____

Remote Consulting Tips

- Ask for and meet communication needs where possible;
- Instead of using the telephone, where possible use video conferencing tools and add live captioning through video conferencing software
- Utilise RelayUK for people with hearing loss
- Utilise Video Relay Services, such as InterpreterNow, for British Sign Language users

Remote Consulting Tips (contd.)

BSL Health Access https://bslhealthaccess.co.uk/health-service-provider/

- Immediate, on-demand access to BSL interpreters for communication with Deaf people in all health settings, including pharmacy, opticians, general practice and dentists
- Free of charge
- Access to BSL interpreters take place through two methods: Video Relay Services (VRS)—when a BSL interpreter relays information over a telephone call between a BSL user and the hearing person receiving or making the call; and Video Remote Interpreting (VRI)—where a remote interpreter is used to facilitate communication with a Deaf and hearing person in the same location.

Assistive Devices and Government Schemes

ACCESS TO WORK GOVERNMENT SCHEME (FOR PATIENTS STILL IN EMPLOYMENT)

DISABLED STUDENTS' ALLOWANCES SCHEME (FOR PATIENTS STILL IN EDUCATION)

VETERANS HEARING FUND (VETERANS WHO SUFFERED HEARING LOSS DURING SERVICE)

SENSORY SERVICES – HOME ASSESSMENT BY LOCAL COUNCIL

BT PROVIDE A FREE OF CHARGE **TEXT RELAY TELEPHONE SERVICE**

Support Services for the Deaf Community

NHS 111 BSL Services

Link to video: https://www.youtube.com/watch?v=4O0js0832Ng&feature=emb_logo

Support Services for the Deaf Community

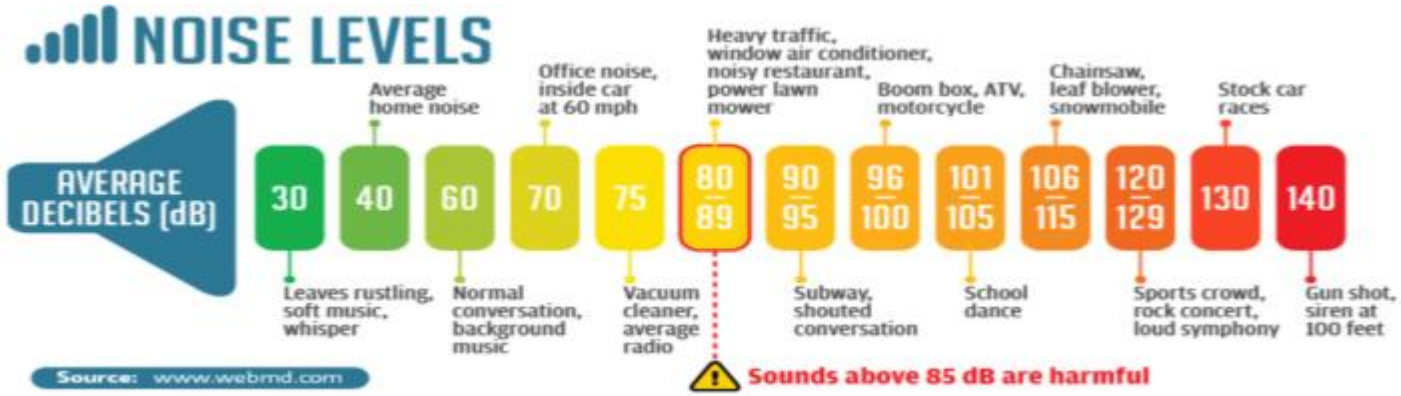
DeafHope – For domestic abuse help text 07970 350366

Shout – Crisis Text Line: First free 24/7 texting service in the UK for anyone in crisis– not just suicide, but any painful emotion for which you need support. Text 85258.

Preventing Hearing Loss

- **85dBA and above** is the level at which **noise becomes unsafe** without the use of hearing protection
- The '**dosage**' of noise exposure is dependent on two main things:
    1. the '**volume' or intensity** of the noise
    2. the **time or duration** of the exposure to that noise.
- **WHO** launched **"hearWHO",** a free application for mobile devices which allows people to check their hearing regularly and intervene early in case of hearing loss.

Noise intensity (dB)	Maximum unprotected exposure*	Typical example
85	8 hours	blender, milling machine
88	4 hours	forklift truck
91	2 hours	Tube train
94	1 hour	lawnmower
97	30 minutes	industrial fire alarm
100	15 minutes	bulldozer, handheld drill
103	7½ minutes	mp3 player at full volume
106	3¾ minutes	motorbike
109	112 seconds	crying baby, jackhammer
112	66 seconds	live rock band
115	33 seconds	emergency vehicle siren



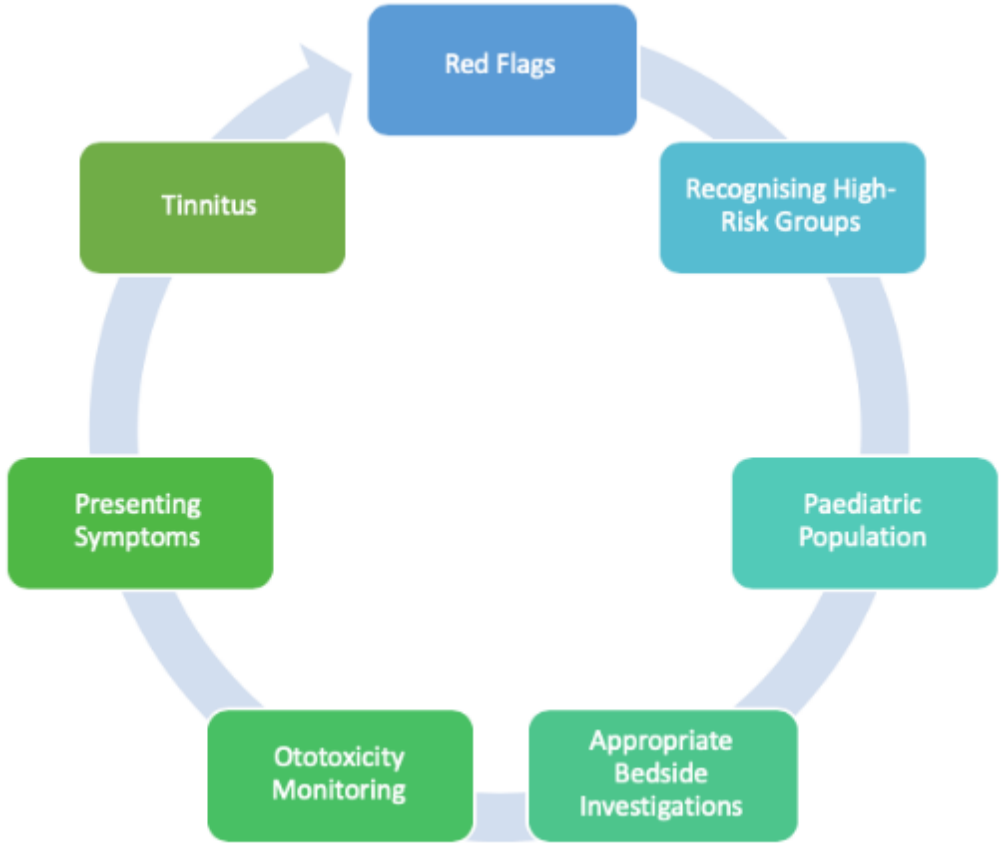
Psychological Effects of Hearing Loss

- Hearing Loss and Dementia Link – Lancet Study (Livingstone G et al, 2017)
- Reduces quality of life
- Depression
- Loneliness
- Effects employment
- Impact on family members

[click on the sound-clip to hear how age-related hearing loss can completely distort speech]

Recognising Signs of Hearing Impairment

What signs would indicate a hearing loss?

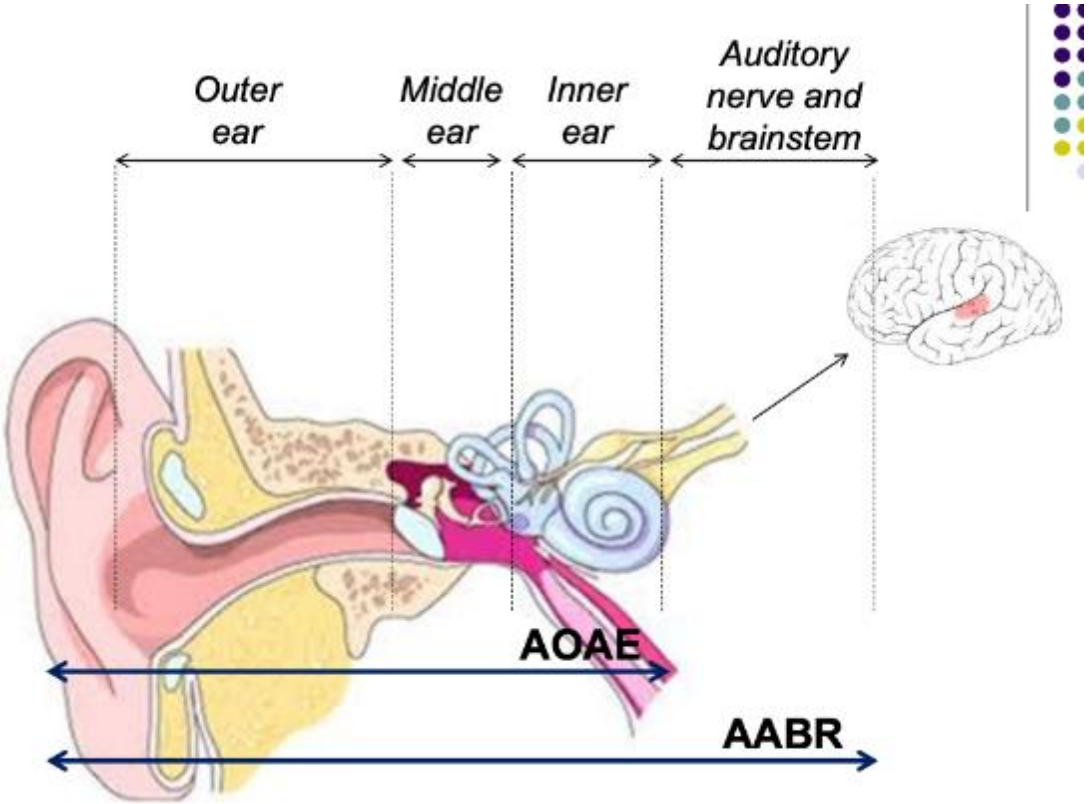


Red Flags

- **Asymmetrical** or **unilateral** hearing loss
- **Sudden** hearing loss
- If the **hearing loss worsened** rapidly (over a period of four to 90 days
- **Otalgia with otorrhoea** that has not responded to treatment within 72 hours
- **Persisting middle ear effusion** in patients of Chinese or Southeast Asian origin
- **Fluctuating** Hearing loss
- **Hyperacusis**
- **Persistent tinnitus** that is **unilateral, pulsatile,** has significantly changes in nature or is causing distress

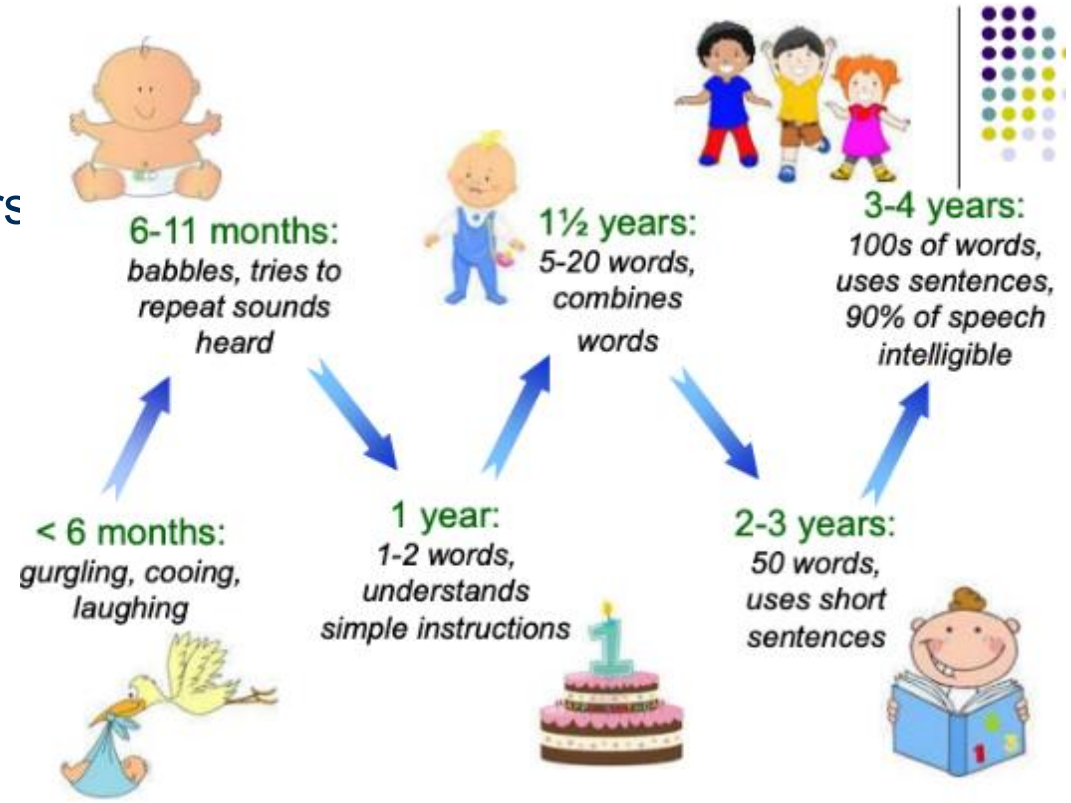
Newborn and Childhood Screening

- **Antenatal information** given at 34 weeks. Screening using AOAE with parent present and immediate explanation of results done shortly after birth, and usually tested on the ward as an inpatient or on outpatient clinic
- **Automated Oto-acoustic Emissions** (AOAE)- tests outer hair cell function of inner ear
- **Automated Auditory Brainstem Response** (AABR) tests auditory pathway up to brainstem level including 8th nerve



Newborn and Childhood Screening

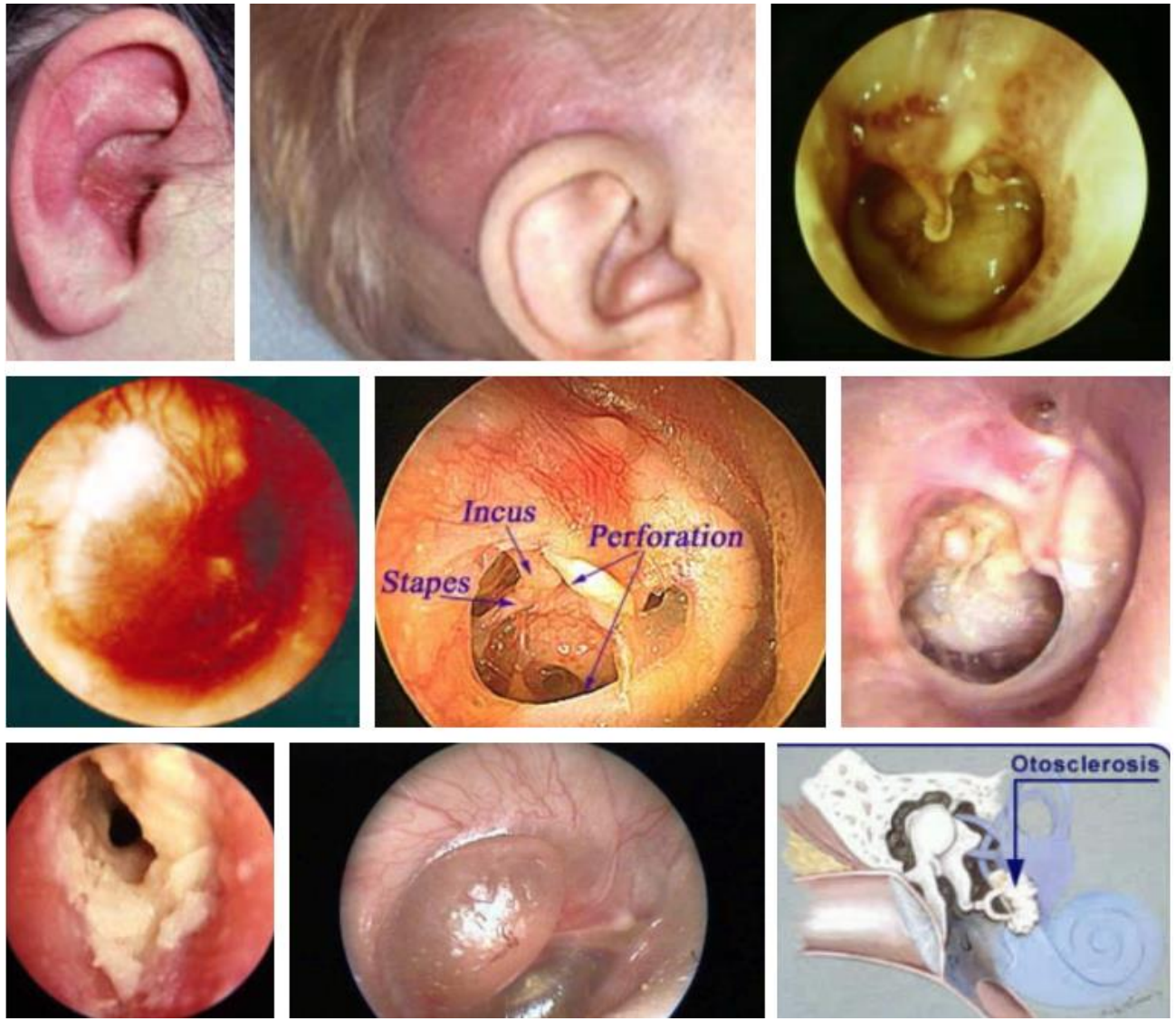
- If AOAE (automated otoacoustic emissions) normal (clear response), discharge or consider other factors requiring surveillance. If other factors present, refer for audiological assessment at seven to nine months
- If AOAE abnormal (no clear response), do AABR
- If AABR abnormal (no clear response) in one or both ears refer for early audiological assessment within four weeks of screening completion or 44 weeks gestational age



Childhood Screening

- **School hearing screen** offered as part of school entry health check (includes vision, height and weight).
- Very sensitive new-born hearing screen, some cases of significant hearing loss will be missed, or will develop later.
- **Glue ear** can also be picked up in school children early with the hearing screen.

Ear Disorders



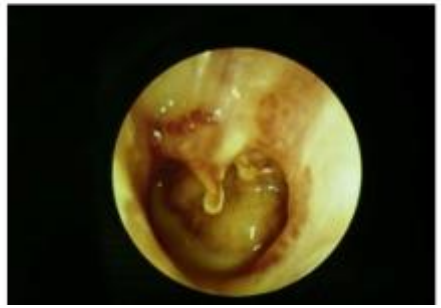
Common Ear Disorders

- **Otitis externa** – Inflammation of the external ear canal. Redness, painful, ear discharge. Called “swimmers ear.”
- **Otosclerosis -** abnormal bone gradually grows around, and onto, the stapes, which reduces its movement. Eventually, the stapes becomes fixed so it can’t move at all – this can cause severe hearing loss.
- **Cholesteatoma** – Skin cyst/sac; epidermal skin from the ear canal or outside surface of the eardrum, does not belong in the middle ear; If it is trapped by a deformed eardrum or migrates through a perforation, it tends to grow out of control and can cause significant damage to the structures of the middle ear and mastoid. Chronic, smelly discharge.
- **Mastoiditis** - develops as a result of an unresolved middle ear bacterial infection which travels into the air cells of the mastoid bone. Fever, redness and swelling behind ear, discharge, lethargy
- Disorders affecting the **skin of the pinna** such as infection, eczema, psoriasis, solar damage and malignancy, **cartilage** injuries, polychondritis
- **Presbycusis** – SNHL associated with ageing
- **Noise-induced hearing loss** – Temporary or permanent HL due to exposure to loud sound (SNHL)

Otitis Media

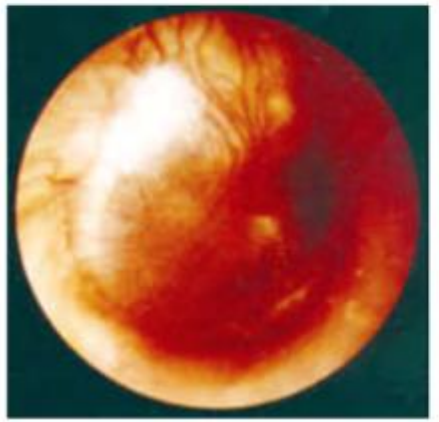
- **Acute suppurative otitis media** – common in children, red bulging TM, otalgia, fever, vomiting, reduced appetite
- **Acute serous otitis media –** common in adults, barotrauma. Otalgia, HL. Serous transudate
- **Non-suppurative otitis media (glue ear, otitis media with effusion)** – transudate fluid in middle ear, dull grey TM, bubbles, air fluid, TM retracted
- **Chronic suppurative otitis media –** long-term damage from recurrent middle ear infections. Scarring and recurrent discharge

CSOM



Acute Serous OM

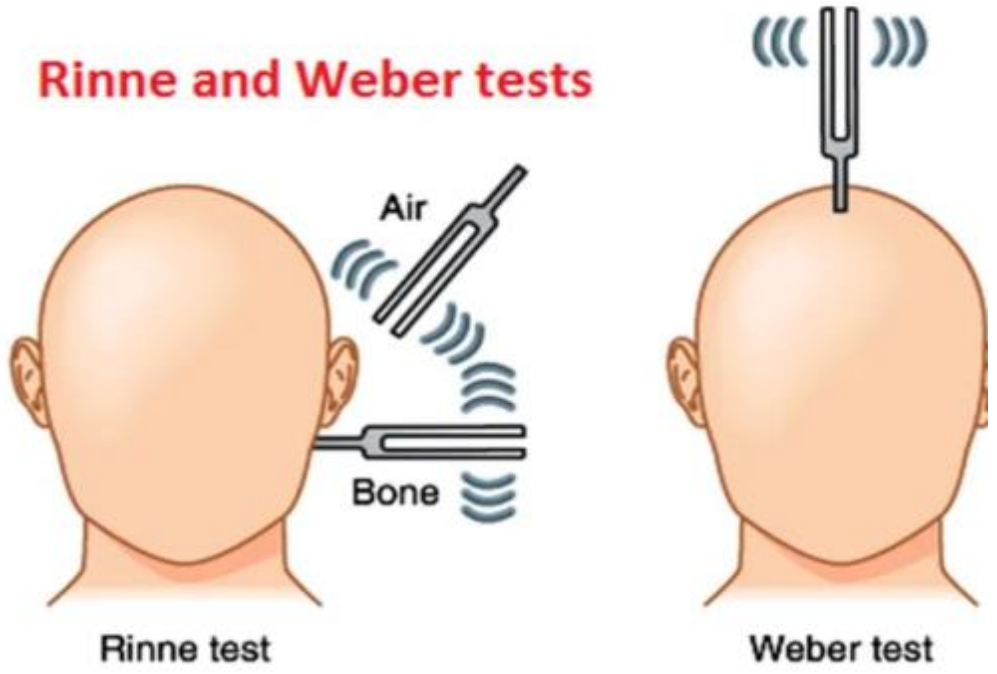
Acute Suppurative OM



- Middle ear fluid causing decreased tympanic membrane mobility and bulging with impaired visibility of bony landmarks, a red or reddish yellow color, exudate on the membrane, or bullae.

Types of Hearing Loss

- **Conductive Hearing Loss** is a result of dysfunction in the middle or outer ear (Bone Conduction (BC) > Air Conduction (AC))
- **Sensorineural Hearing Loss** is a result of cochlea damage (sensory) and/or neural (8th nerve) (BC = AC)
- **Mixed hearing loss** is a combination of dysfunction in middle/outer ear and cochlea/8th nerve (a certain amount of AC and BC loss)
- **Central hearing loss** refers to everything in the auditory cortex (brain) whereas peripheral hearing loss is the result of everything before the brain (outer, middle, inner ear)



Examination and Investigation for Hearing Loss

- Otoscopy
- Tuning Fork
- Pure Tone Audiogram
- Tympanogram

Interpretation of Weber & Rinne tests		
	Rinne result	**Weber result**
Normal	AC >BC bilaterally	Midline
Sensorineural hearing loss		Lateralizes to **unaffected** ear
Conductive hearing loss	BC >AC in **affected** ear, AC >BC in unaffected ear	Lateralizes to **affected** ear

AC = air conduction; BC = bone conduction.

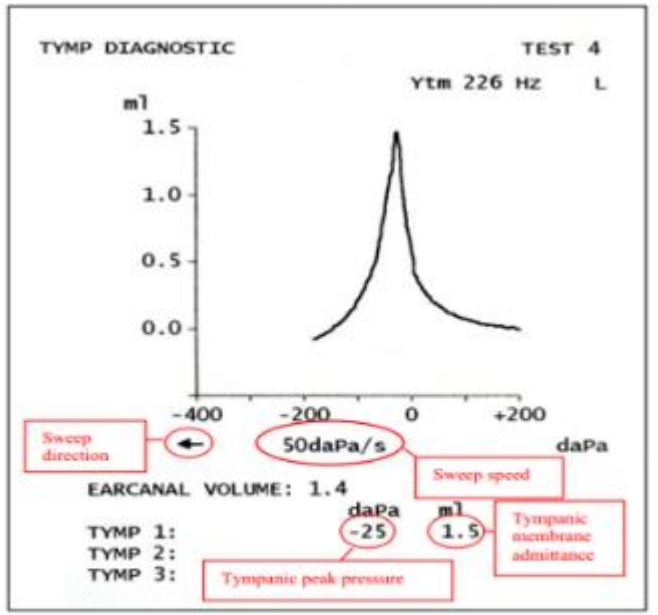
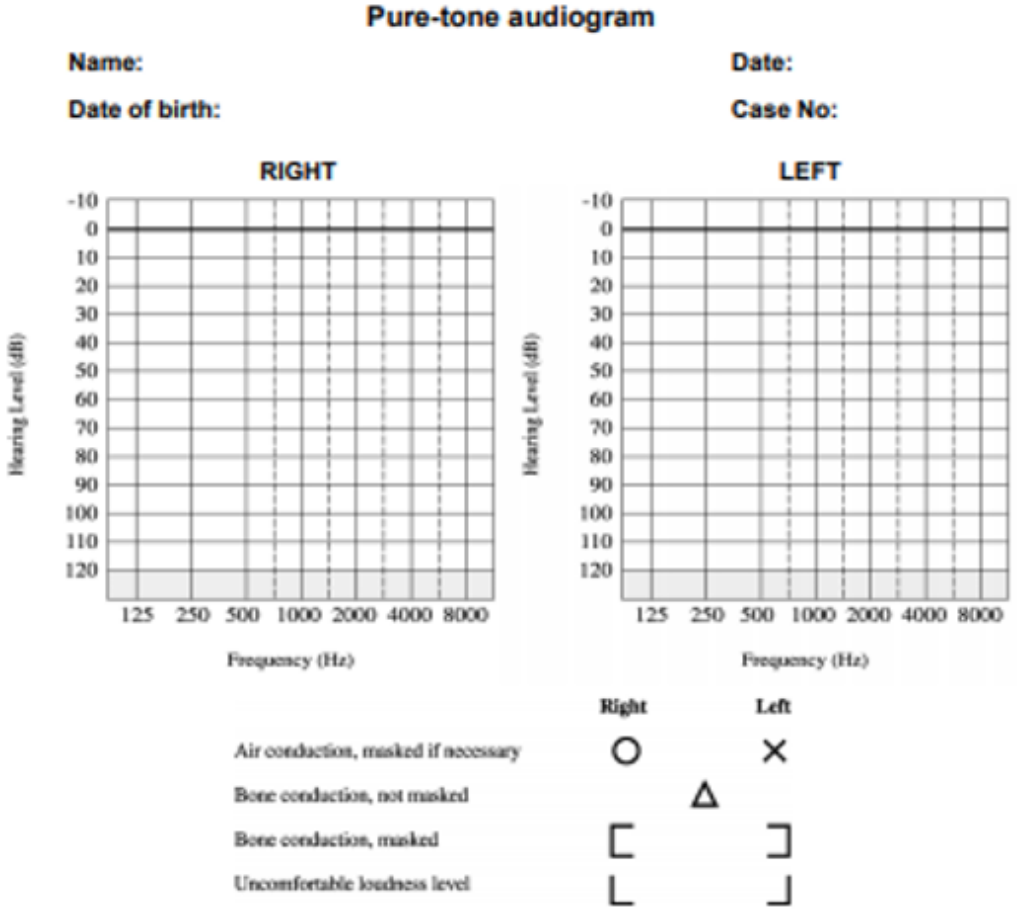


Figure 1

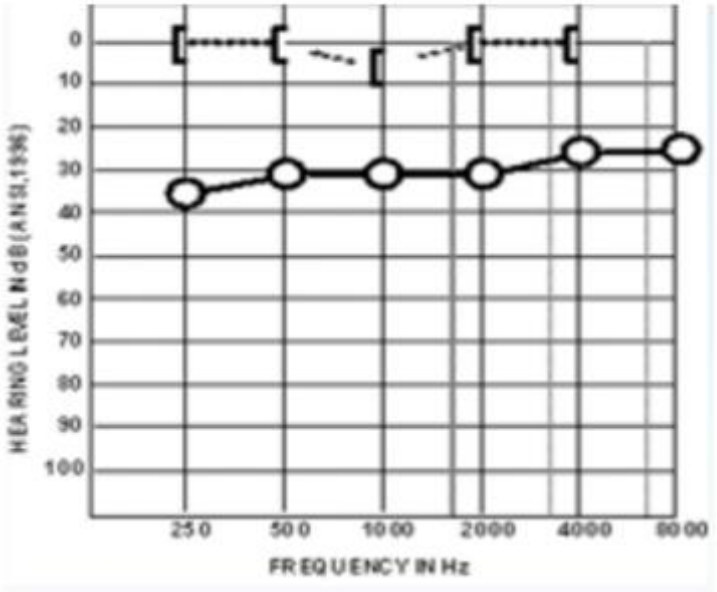
Example of a normal tympanogram from an adult left ear.

Audiograms

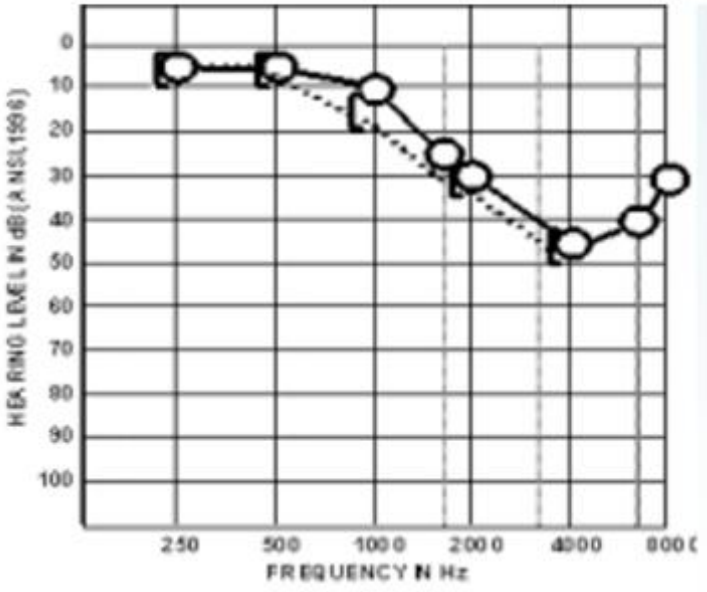


Descriptor	Average hearing threshold levels (dB HL)
Normal Hearing	< 20
Mild hearing loss	21-40
Moderate hearing loss	41-70
Severe hearing loss	71-95
Profound hearing loss	> 95

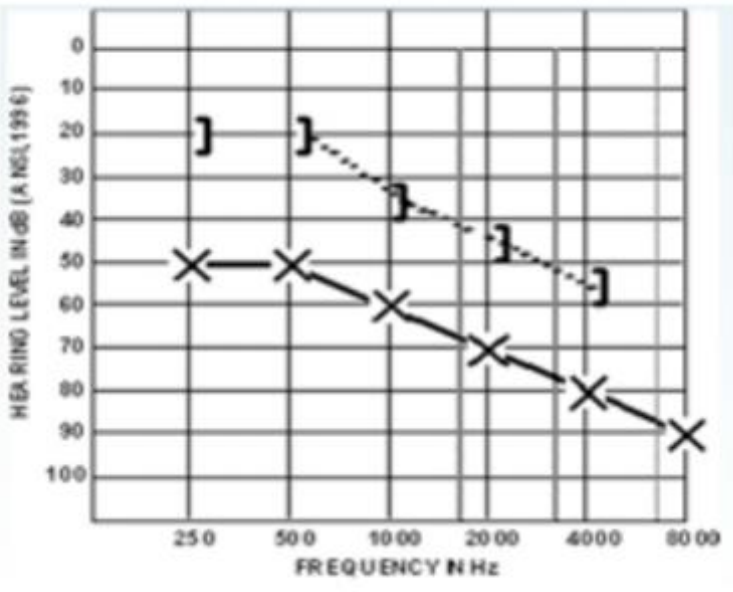
Audiograms – Types of Hearing Loss



Conductive HL



Sensorineural HL



Mixed HL

Referral Pathways

Regional variations exist, please check local services.

Audiologist Led Clinic

Adult Rehabilitation

AVM vs ENT

Hearing Therapy / Clinical Psychology

Cochlear Implant Services

Referral Guideline Timelines

Discuss timelines of referrals. When do you refer?

- Immediately for assessment within 24 hours by ENT or emergency department?
- Refer to be seen urgently within two weeks?
- Refer routinely to ENT or audiovestibular medicine (using a local pathway) anyone presenting with hearing loss (not explained by acute external or middle ear causes)?
- Refer (to an audiology service) all adults at risk of having or developing hearing loss who have limited ability to seek help and in whom hearing loss might otherwise be missed?

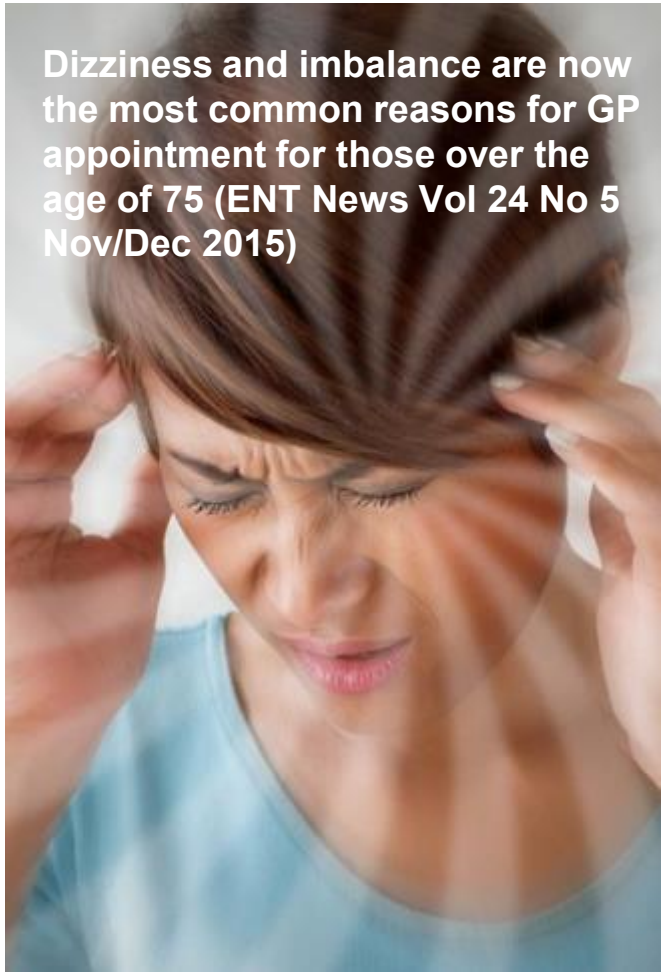
*Sudden hearing loss is defined as hearing loss that occurs over three days or less

*Rapid hearing loss is defined as hearing loss that occurs over four to 90 days.

Cut offs of 3 days, 30 days and 90 days are useful to remember with new onset hearing loss.

Light-headedness vs Dizziness vs Vertigo

- **Light-headedness:** sensation of being faint (presyncope)
- **Dizziness:** a non-specific term used to describe a number of signs and symptoms: unsteadiness, giddiness, light-headed, disequilibrium, vertigo, weakness
- **Vertigo:** an illusion of movement. It does not have to be rotational; Vertigo is much more commonly due to inner ear than to neurological disorders
- **Vertigo: Central causes** (e.g. brainstem stroke, Vestibular Migraine) vs **Peripheral Causes** (e.g. BPPV, Vestibular neuronitis, Ménière's disease, Acoustic neuroma).
- Vestibular migraine (**2nd most common cause vestibular disorder** after BPPV)



Common Balance Disorders

- **BPPV** - vertigo usually triggered by specific changes in the position of your head lasting 30-40seconds or < 1 min
- **Ménière's disease (endolymphatic hydrops)** – Vertigo (lasting 20 mins - hours), tinnitus, fluctuating/sensorineural HL, aural fullness
- **Acoustic neuroma – (vestibular schwannoma)** – Benign tumour on 8th CN/CPA. Unilateral SNHL, tinnitus, vertigo, facial weakness/numbness
- **Vestibular neuronitis -** inflammation of your vestibular branch of the 8th CN only. Commonly caused by viral infection. Vertigo (days to weeks), nausea, hearing spared
- **Labyrinthitis** - inflammation of both vestibular and cochlear branches of 8th CN. Vertigo (lasting days to weeks) **AND** hearing loss/tinnitus, nausea
- **Vestibular Migraine** - vertigo last mins-hours with non-specific unsteadiness for days. Migrainous vertigo may occur without headaches in up to 50% but have noise/light sensitivity, tinnitus
- **Brainstem Stroke –** can impair your speech and hearing and cause vertigo

Bedside Examinations for Balance

- Cranial nerve examination
- Romberg Test/Unterberger Test/Tandem Gait
- HINTS (Head Impulse, test of skew deviation, nystagmus)
- Oculomotor examination (saccades, smooth pursuit, spontaneous and gaze-evoked nystagmus, test of convergence, cover/uncover test)
- Positional testing (Dix-Hallpike, Roll test)

HINTS

Head Impulse, Nystagmus, Test of Skew Deviation (HINTS) - A test for ruling out stroke from peripheral vestibular dysfunction i.e. vestibular neuritis

Normal HIT (worrisome)

https://www.youtube.com/watch?v=1q-VTKPweuk

HINTS

	Peripheral Vertigo	Central Vertigo
Head Impulse Test	Abnormal; corrective saccade to midline with rotation of head	Normal; no corrective saccade
Nystagmus	Unidirectional; horizontal	Horizontal & direction-changing; vertical; torsional
Test of Skew	No skew deviation	Skew deviation present

BPPV (Benign Paroxysmal Positional Vertigo)

The **Dix-Hallpike** test: diagnostic manoeuvre to identify **posterior/anterior BPPV** - BMJ Learning Video

https://www.youtube.com/watch?v=8RYB2QlO1N4

BPPV (Benign Paroxysmal Positional Vertigo)

The **Epley** manoeuvre: treats posterior canal BPPV – BMJ Learning Video

https://www.youtube.com/watch?v=jBzID5nVQjk

BPPV (Benign Paroxysmal Positional Vertigo)

- **Side-lying test** is an alternative to Dix-Hallpike when patient not as mobile (treatment for this is the **Semont test**)
- **Roll test** is a diagnostic manoeuvre to identify **horizontal canal BPPV**
- **NICE Advice** for BPPV on driving, workplace, falls at home: https://cks.nice.org.uk/benign-paroxysmal-positional-vertigo#!scenario

Eye movements associated with the different forms of BPPV

Canal	Underlying mechanism	Ear affected	Direction of nystagmus	Latency	Duration
Posterior	Canalithiasis	Lower ear	- Torsion to affected ear - Up-beating	2-40 s[10]	< 60 s
Posterior	Cupulolithiasis	Lower ear	- Torsion to affected ear - Up-beating	No latency	> 60 s
Anterior	Canalithiasis[11]	Direction of the torsion	- Torsion to affected ear - Down-beating	2-40 s	< 60 s
Anterior	Cupulolithiasis[12]	Direction of the torsion	- Torsion to affected ear - Down-beating	No latency	> 60 s
Horizontal	Canalithiasis (of posterior arm of the canal)	Side with stronger nystagmus	- Horizontal geotropic	2-40 s	< 60 s
Horizontal	Cupulolithiasis	Side with milder nystagmus	- Horizontal apogeotropic	No latency	> 60 s
Horizontal	Canalithiasis of the short or anterior arm of the canal, near to the cupula	Side with milder nystagmus	- Horizontal apogeotropic	2-40 s	Shorter than in horizontal canal cupulolithiasis

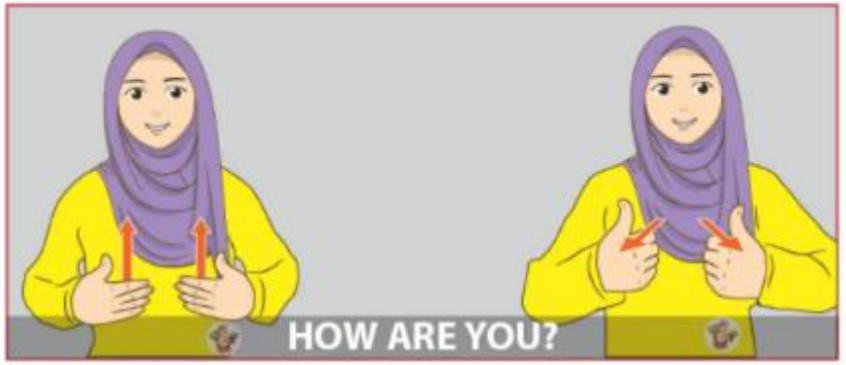
Wax Removal

- Around 2.3 million primary care consultations a year are for symptomatic ear wax
- Hearing aid users with wax blocking their ears prevents aural impressions to be made and can be mistaken for the hearing aids not working
- Is a common cause of deafness and must be excluded or treated before referral to audiology
- NICE recommends removal (in adults) in primary care or community ear care services
- Ear drops / Ear Irrigation / Microsuction

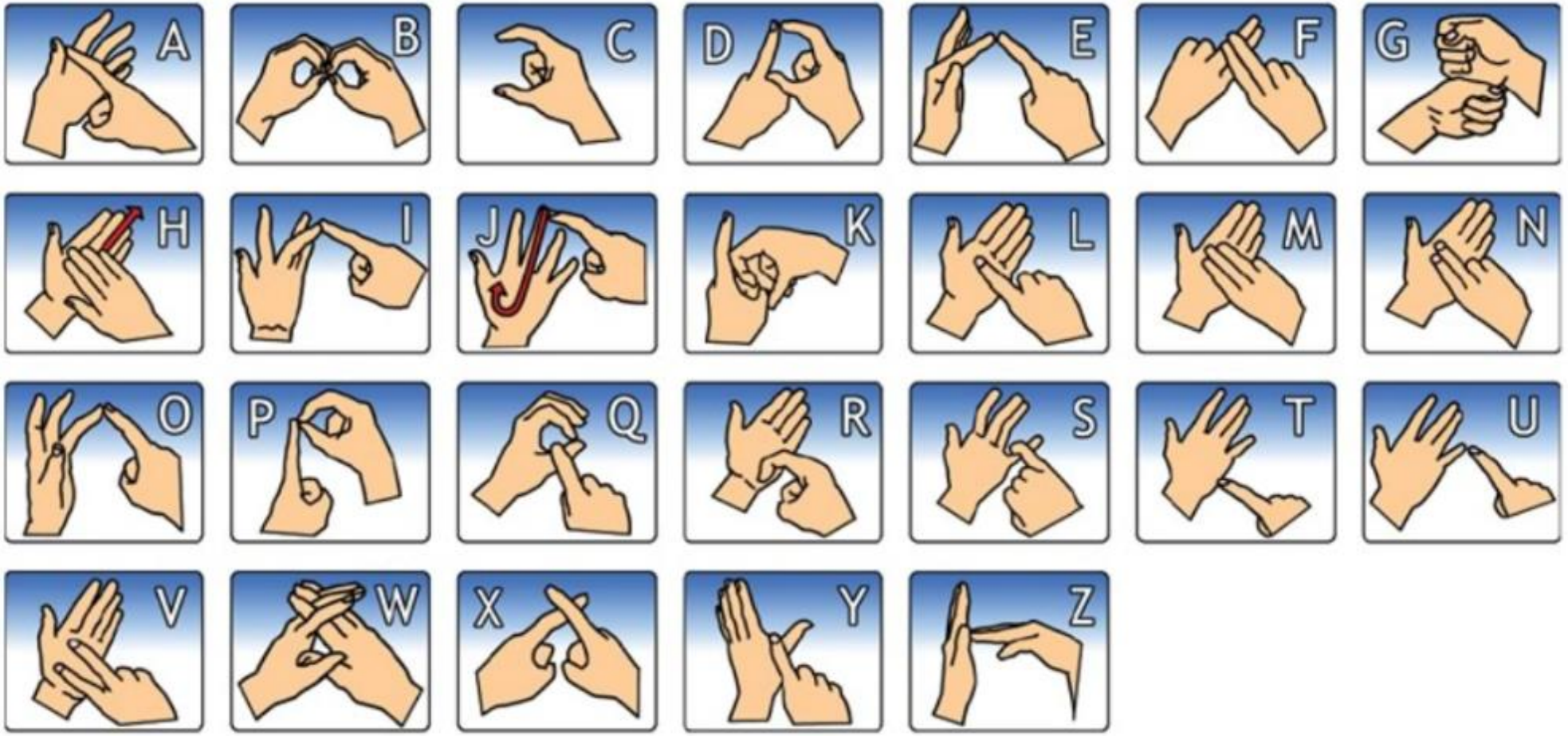
Roles of BSL in the Deaf Community

- **British Sign Language (BSL),** is the main communication tool of members of the Deaf community. BSL was officially recognised by the **government in 2003.**
- Basic communication tools, such as **finger spelling** can help communicate with someone who is a member of the Deaf community
- Hearing impaired patients can also use finger spelling to help with communication, and you can support lipreading by using it when appropriate.
- Some people will use other forms of sign language:
- **Makaton** uses a sign and symbol system
- **Sign Supported Speech (SSS)** involves voicing everything as in spoken English supported by Manually Coded English (MCE)
- **Cued Speech** uses eight hand-shapes in four different positions near the mouth to clarify the lip patterns of normal speech

BSL GREETINGS



BRITISH SIGN LANGUAGE - **FINGERSPELLING**

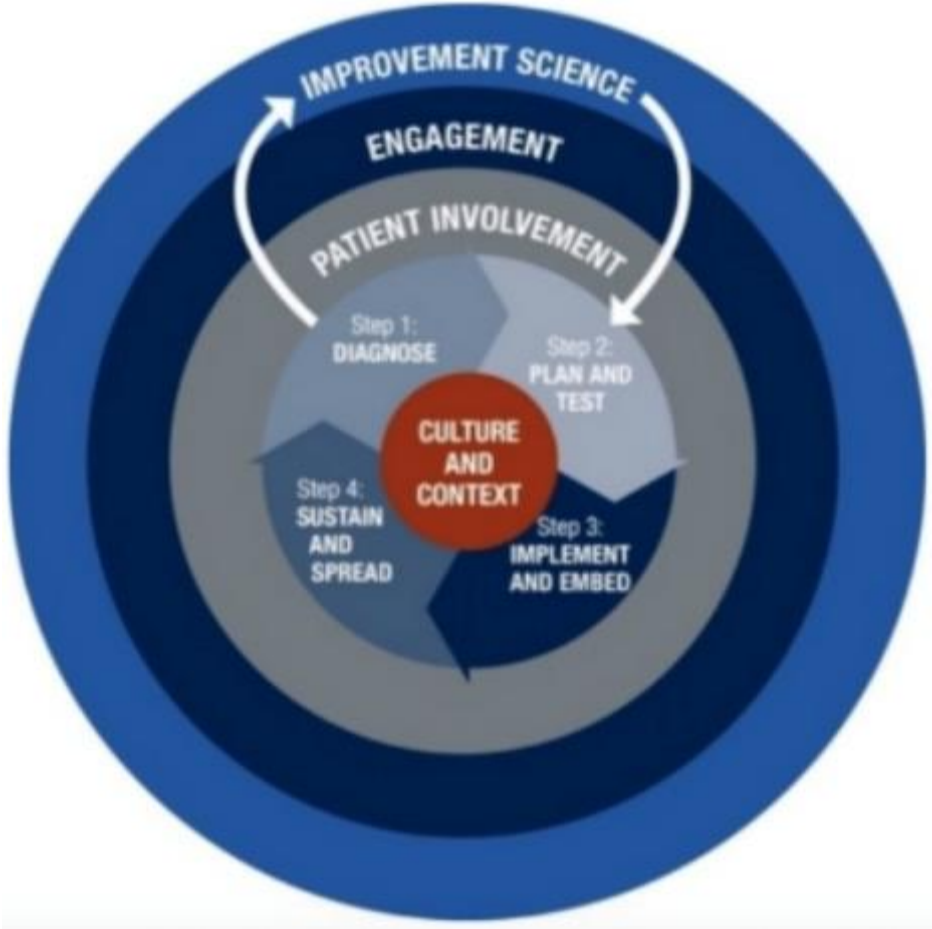


Communication strategy dependant on severity of hearing loss

Hearing Loss	Measure (dB HL)	Symptom	Communication Strategy
Mild	21-40	Difficulty following speech in background noise	Lip Reading
Moderate	41-70	Difficulty following speech in background noise. Mishear with/without visual cues, TV, phone, in group situations	Hearing aid, lip reading
Severe	71-95	Difficulty following speech in any situation with a hearing aid	Lip reading, BSL
Profound	>95	Will hear very little with a hearing aid	May benefit from cochlear implant, lipreading, finger spelling or use BSL

Quality Improvement Initiatives

- Deaf Awareness Training
- Accessibility
- Communication
- Patient Records
- Mental Health



MRCGP Question Examples

AKT

- Natural history of glue ear in children

CSA

- Hearing-impaired man has trouble with tinnitus interfering with his sleep and concentration

WPA

- Clinical Examination and Procedural Skills (CEPS) on examining a patient with unilateral deafness and the interpretation of the results

Further Reading

- **RCGP Toolkit** https://www.rcgp.org.uk/hearingloss
- **RCGP E-Learning** https://elearning.rcgp.org.uk/mod/lesson/view.php?id=8356&pageid=22299
- **RCGP Screencast** https://elearning.rcgp.org.uk/mod/page/view.php?id=6522
- **Deaf Awareness Training** https://www.rcgp.org.uk/learning/rcgp-educational-accreditation-for-education-providers/accredited-activities.aspx?CurrentPage=4&keyword=deaf%20awareness
- **Podcasts** https://audioboom.com/channels/4962368
- **RCGP Hearing Friendly Practice Charter** https://www.rcgp.org.uk/hearingloss
- **COVID-19 and Hearing Loss** https://blogs.bmj.com/bmj/2020/05/20/d-deafness-and-solidarity-in-the-covid-19-pandemic/
- **Research: Access All Areas Report, Hearing Matters Report, Sick of It Report**