Hearing impairments and intellectual disability

"Mr. Hudson, it's time for your hearing test."
Plan of talk

- What is a hearing impairment?
- Prelingual or acquired hearing impairments
- Audiograms
- ID and hearing impairments
- Mental illness
- Cochlear implants
- Deaf awareness
What is a hearing impairment?

- A hearing loss that prevents a person from totally receiving sounds through the ear.

- If the loss is mild, the person has difficulty hearing faint or distant speech. A hearing aid will help to amplify sounds.

- If the loss is severe, the person may not be able to distinguish any sounds even with a hearing aid.
There are four types of hearing loss:

- **Conductive:** caused by diseases or obstructions in the outer or middle ear that usually affect all frequencies of hearing. A hearing aid generally helps a person with a conductive hearing loss.

- **Sensorineural:** results from damage to the inner ear. This loss can range from mild to profound and often affects certain frequencies more than others. Sounds are often distorted, even with a hearing aid.

- **Mixed:** occurs in both the inner and outer or middle ear.

- **Central:** results from damage to the central nervous system.
Early hearing impairments

- Disrupt parent child bond
- Interfere with language development
- Loss of incidental learning
- Delay theory of mind
- Alter way of thinking
Early hearing impairments impact on development

- Deaf before speech- spoken speech unintelligible, need manual language, culturally deaf.
- Develop a visual not an auditory view of the world.
- Deaf adults with intellectual disability may never realize they are deaf.
The Deaf perspective

- ‘My sister told me hearing people see with their ears’
- ‘I thought I would become hearing when I grew up as I never met any deaf adults’
- ‘We thought we would die when we grew up because we never saw anyone who left our school again’
Hearing impairments from birth or acquired

<table>
<thead>
<tr>
<th>From early life</th>
<th>Acquired</th>
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<tr>
<td>Deaf before speech- spoken speech unintelligible, need manual language, culturally deaf.</td>
<td>Need to adapt and learn new skills.</td>
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<td>Disrupts parent-child bond and language acquisition.</td>
<td>Need to learn to use aids.</td>
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<td>Delayed theory of mind</td>
<td>Family carers need to adjust too.</td>
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<tr>
<td>Altered way of thinking</td>
<td>Still think in auditory way</td>
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The speech banana
Vowels and Consonants
Normal hearing
Moderate/severe hearing loss
*An example presbyacusis (sloping high-frequency hearing loss) synonymous with the ageing process.*
More prevalent in ID than general population.

Deafness 40 times commoner than general population and blindness 8.5 times

Deaf-blind highest prevalence in severe to profound ID.
The prevalence of sensory impairments in ID is increased

- In Downs Syndrome
- With age
- As IQ decreases
- In ethnic minority groups
- With poverty
Sensory impairments are often misunderstood

- He can hear / see when he wants.
- She can lip read everything.
- He can talk so he is pretending he is deaf and does not need to sign.
- She picked up her cup so really she can see.
Sensory impairments may be missed

- Screening programmes & referral thresholds may not meet the needs of people with ID.
- Annual sight and hearing checks often do not happen.
- Carers are not good at picking up sensory impairments in people with ID
- There are high levels of previously undetected sensory impairments- even in elite athletes!
Pre-screening
- HI 12.5%
- VI 17%
- Deaf-blind 3.6%

Post screening
- 46%
- 38.4%
- 21.4% (>80% profound LD)

Fellinger et al, 2009 study of 224 adults with ID in JIDR
Functional assessment of Hearing Impairment

- Size and shape of ears (absent or very small)
- Talking too loudly or whispering
- Ignoring loud noises
- Startled by approach of people not in sight
- Responds only to some voices
- Misunderstanding instructions
- Covering, poking, slapping ears
- Moving close to sounds
- TV on too loudly
- Experimenting with noises
Auditory processing disorders

- Inattention to oral information- poor listening skills
- Cope better with visually acquired information
- Need to hear only one direction at a time
- Need more time to process information
- Need people to speak slowly
- Dislike locations with background noise
- Can’t determine direction of sounds
Mental illness and sensory impairments in Intellectual disability

- Cooper et al 2007 found no associations mental illness and sensory impairments.
- Increased prevalence of emotional and behavioural disorders.
- High rates of physical and sexual abuse.
- Substance use equivalent to general population.
Specific associations

- 5 fold increase of non affective psychosis in rubella deaf.
- ADHD and rubella
- High prevalence of hearing impairments in autism and high prevalence of autism in deafness: diagnosis of either condition may be delayed.
Cochlear implants and intellectual disability

- ID has been considered a contraindication in the past
- Good outcomes in auditory perception and speech development
- Make slower progress than non-ID children (especially if autistic)
- Implant does not reduce rates of behavior problems (cf non-ID)
Two deaf people are signing standing apart and blocking the way. Why are they doing this? You need to walk through, how do you do this?
Getting attention: how do you get a deaf person’s attention? How do they get your attention if they can’t talk?
Deaf awareness, 3

Hearing person is signing to deaf person when the phone or doorbell rings. What happens next?
2 hearing carers are talking to each other- how does the deaf person they support feel?
In intellectual disability hearing impairments

- Impact on socialisation, cognition and language.
- Have a bigger impact the earlier the age of onset.
- Necessitate adapting and if acquired learning new skills.
- Are likely to be missed or diagnosed late.
- Are likely to be associated with other sensory impairments.
- May mask other disorders like autism.