



Sound Check

CLINICAL BULLETIN #7

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Using The THS-H Survey to Identify and Treat Adults with Normal Audiograms and Self-Reported Hearing Difficulties



Description of the Condition

Individuals with a normal audiogram (≤ 20 dB HL from 250–8000 Hz, as illustrated in Figure 1) who nonetheless report communication difficulties—especially in noise, groups, or complex listening environments—are often described as having a functional hearing disorder or subclinical auditory dysfunction.



A Lack of Consensus *What's Normal?*

There is no clear consensus on how “normal hearing” should be defined. The routine audiogram has remained unchanged for 100 years. The results shown on the audiogram do not always reflect functional abilities of the individual.

250 to
8000Hz



A Lack of Consensus *What's It Called?*

There is no consensus on the name of this condition. It has several labels:

- Hearing difficulties despite normal audiograms (HDNHA)
- Subclinical hearing loss
- Hidden hearing loss
- Central auditory processing deficits (CAPD)
- Listening difficulties / communication difficulties
- Auditory processing disorder—like symptoms in adults
- Cochlear synaptopathy

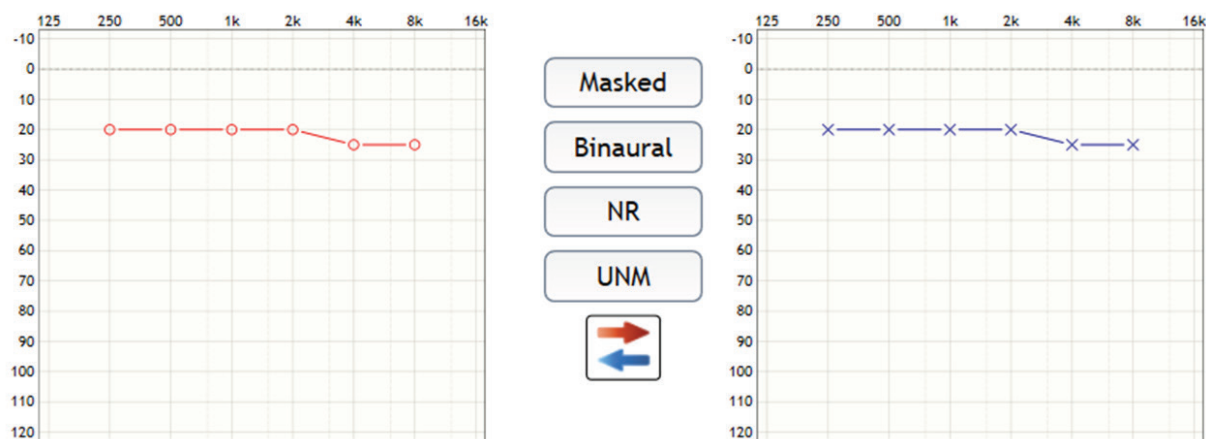
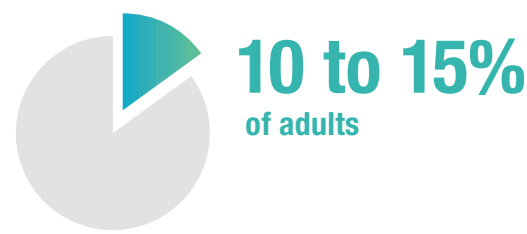


Figure 1. The typical audiogram of an individual with self-reported communication problems

 Prevalence of the Condition

Research shows that approximately 10 to 15% of the general adult population has self-reported communication difficulties accompanied by a normal audiogram (Tremblay et al., 2015 Spankovich, et al 2018 and Curti et al 2019).



45% of audiologists surveyed report seeing 1 to 3 individuals per month with this condition and 23% report seeing 4 or more individuals per month (Koerner et al 2020).

 Identification of the Condition

The original Tinnitus and Hearing Survey (THS) was developed in 2015 to provide a self-report option for US Veterans with hearing and tinnitus problems. In its initial form, the hearing subscale (four items) were scored on a five-point scale: 0 to 4, resulting in a maximum possible score of 16. The scale has been modified as the Tinnitus and Hearing Survey—Hearing (THS-H) using an 11-point scale, as shown in Figure 2. Davidson et al (2024) validated the THS-H on ~1,500 Veterans, many of whom presented with noise and blast injuries. **They determined a score of 27 or higher equates to the bottom 5th percentile of hearing performance.**

Tinnitus and Hearing Survey-Hearing Subscale											
Hearing	No, not a problem										Yes, a very big problem
Over the last week, I couldn't understand what others were saying in noisy or crowded places.	0	1	2	3	4	5	6	7	8	9	10
Over the last week, I couldn't understand what people were saying on TV or in movies.	0	1	2	3	4	5	6	7	8	9	10
Over the last week, I couldn't understand people with soft voices.	0	1	2	3	4	5	6	7	8	9	10
Over the last week, I couldn't understand what was being said in group conversation.	0	1	2	3	4	5	6	7	8	9	10

Figure 2. The THS-H

Hearing Aid Outcomes

Davidson et al (2024) fitted 186 US Veterans with hearing aids.

Figure 3 illustrates wear time and Figure 4 illustrates global benefit for these 4 groups.

- Normal Hearing Test (NHT)/Significant Hearing Difficulty (SHD) = 13
- Normal Hearing Test (NHT)/No Hearing Difficulty (NHD) (tinnitus) = 36
- Hearing Impairment (HI)/Significant Hearing Difficulty (SHD) = 80
- Hearing Impairment (HI)/No Hearing Difficulty (NHD) (tinnitus) = 57

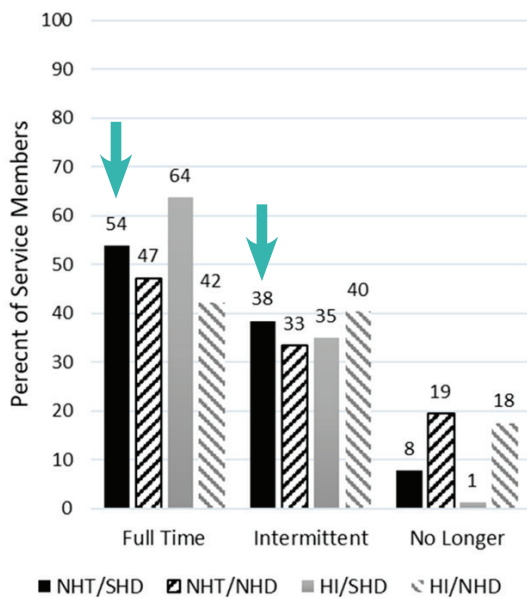


Figure 3. Percentage of participants reporting full-time use for 4 groups. (From Davidson, et al 2024). Blue arrows denote the normal audiogram/significant self-reported hearing difficulty group.

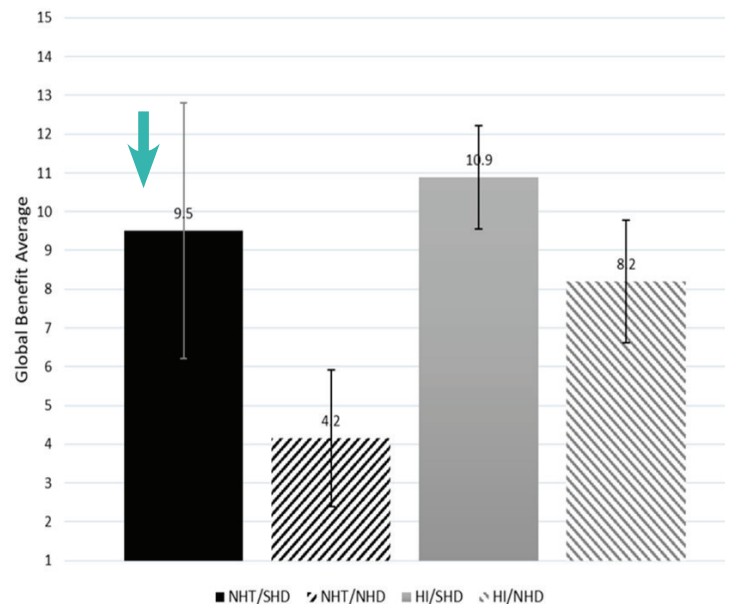


Figure 4. Global benefit average on the Hearing Aid Use and Benefit Questionnaire for 4 groups. (From Davidson, et al 2024). Blue arrow denotes the normal audiogram/significant self-reported hearing difficulty group.

Clinical Implications

1. The THS-H is a time-efficient and valid tool for identifying adults with normal audiograms who may benefit from hearing aids.
2. Both usage time and global benefit for those with normal audiograms and self-reported hearing difficulties are comparable to those with significantly greater hearing loss on the audiogram.
3. Low-gain hearing aids with minimal distortion, that provide sufficient audibility are practical solutions for this population.
4. Hearing aid outcomes shown here reflect VA service delivery in which patients incur no out of pocket costs. Thus, other low cost treatment options (e.g., high quality PSAPs, OTC and auditory training exercises) should be considered in a commercial clinic.

"Audiology must recognize our reliance on the audiogram now and aim to offer these services more routinely."



Expanding Our Scope of Practice

“The fact that our primary treatment for hearing loss == hearing aids -- is tied to the audiogram has effectively narrowed the audiologist’s scope of practice. Only 7% of audiologists dispense PSAPs, 20% provide tinnitus evaluations, 20% provide auditory training, and 29% routinely perform speech-in-noise testing.

All these services could potentially benefit the “normal-hearing” population who self-report difficulties. Audiology must recognize our reliance on the audiogram now and aim to offer these services more routinely.” - Gatlin and Dhar (2021)

References

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