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# NeuroAudiology Newsletter

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## An Appreciative Note

### AUDIOLOGY TRIVIA

ANSWERS ON LAST PAGE

- 1) The length of the adult ear canal (external auditory meatus) is approximately how long?  
a) 1.5cm, b) 2.5cm, c) 3.5cm, d) 5cm
- 2) A B-70A refers to what?  
a) An audiometer, b) A bone conduction oscillator, c) An electrode, d) An insert earphone
- 3) Grant Rasmussen is commonly associated with what anatomical discovery?  
a) The olivo-cochlear bundle, b) The ventral stria, c) The anterior commissure, d) The lateral superior olive

Happy 2024 to everyone!

As we start a new year, I reflect back on the great work Alyssa Davidson, Julianne Ceruti, and Amy Bradbury have done for Pathways publications. Alyssa, a long-time editor, Julianne who has worked on the processing of Pathways monthly articles for Hearing Health and Technology Matters (HHTM), and Amy, who came on this past year as co-editor of our newsletter. MANY THANKS FOR ALL YOUR WORK. –FM



# NeuroAudiology/CAPD Corner

## Topic: Presentation Level of Dichotic Digits and Frequency (Pitch) Pattern Tests

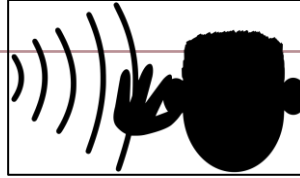


\*From Frank Musiek's perspective\*

I recently became aware of some misunderstanding related to the presentation level of the dichotic digits and frequency pattern tests. Most audiologists select a presentation level of 50 dB HL for both tests which was the intensity level of the original research for both tests. This is assuming the patient or participant has normal hearing thresholds. This is the level that I still use. However, for the digits and patterns, test levels ranging from 20 – 50 dB HL can be utilized with essentially no change in performance on either test. This range of intensity becomes more of a focus in cases of hearing loss. In asymmetrical sensorineural hearing loss, using equal sensation levels, or balancing loudness between ears using test stimuli, is probably the best approach. Remember, always consider possible crossover in applying these tests – especially in asymmetrical hearing loss. Also, recall Zwislocki's key research contribution on central masking effects. Masking would likely influence performance on central auditory tests and therefore should not be used in most cases.

## CAPD Corner Suggested Reading

- Zwislocki, J. J. (1972). A theory of central auditory masking and its partial validation. *The Journal of the Acoustical Society of America*, 2(2), 644-659.
- Musiek, F. (1994). Frequency (Pitch) and Duration Pattern Tests. *Journal of the American Academy of Audiology*, 5, 265-268.



# Advancing NeuroAudiology

Auditory processing: The ‘canary in the coal mine’ for subconcussive head injury: A test of auditory brain health shows when enough is enough for contact and collision athletes.

A study resulting from a joint collaboration between Northwestern’s Auditory Neuroscience Laboratory and Northwestern University Athletics and Recreation and published in the Journal Exercise, Sport, and Movement has uncovered a brain measure that could one day help to identify an athlete’s tipping point. The biological measure, called the frequency-following response (FFR), is obtained by placing a few sensors on the athlete’s head and playing sounds to their ear. The authors found that the brain’s response to a sound’s pitch is poorer in contact male athletes compared to non-contact athletes. Auditory processing may be more sensitive than the other domains currently involved in concussion assessment.

Dr. Nina Kraus, Hugh Knowles Professor of Neurobiology and Otolaryngology in the School of Communication at Northwestern, served as senior author on the study. <https://news.northwestern.edu/stories/2023/06/auditory-processing-the-canary-in-the-coal-mine-for-subconcussive-head-injury/?fj=1>

## Recent Pathways Monthly Articles on Hearing Health & Technology Matters

October 2023 – Pathways: An informative 5 minute read... The Binaural Interaction Component (BIC)

November 2023 – Pathways Interview with Ron Leavitt, Director, Corvallis Hearing Center, Corvallis, Oregon

December 2023 – An Historical Vignette: Proceedings of a Symposium on Central Auditory Processing Disorders

# Watch for: Quest for the Best on CAPD/NeuroAudiology

This spring, a mini-symposia on CAPD/NeuroAudiology will be held featuring distinguished speakers and timely topics. This symposia is sponsored by Pathways and the University of Kentucky. More information to follow on Pathways, Hearing Health and Technology Matters (HHTM), and e-mail outlets. Alternatively, contact Frank Musiek for more information...

[fmusiek@arizona.edu](mailto:fmusiek@arizona.edu).

## Current Literature to Review

- Jiang, J., Johnson, J. C., Requena-Komuro, M. C., Benhamou, E., Sivasathiaseelan, H., Chokesuwattanaskul, A., ... & Hardy, C. J. (2023). Comprehension of acoustically degraded speech in Alzheimer's disease and primary progressive aphasia. *Brain*, 146(10), 4065-4076.  
<https://discovery.ucl.ac.uk/id/eprint/10173294/1/awad163.pdf>
- Marschall, T. M., van Dijk, P., Kluk, K., Koops, S., Linszen, M. M., Griffiths, T. D., ... & Ćurčić-Blake, B. (2023). Hallucinations in Hearing Impairment: How Informed Are Clinicians?. *Schizophrenia Bulletin*, 49(Supplement\_1), S33-S40.  
[https://academic.oup.com/schizophreniabulletin/article/49/Supplement\\_1/S33/7058007?login=false](https://academic.oup.com/schizophreniabulletin/article/49/Supplement_1/S33/7058007?login=false)

**AUDIOLOGY**

**TRIVIA**

**ANSWERS**

1) The adult ear canal is about (B) 2.5 cm long.

2) A B-70A refers to a (B) Bone conduction oscillator.

3) Grant Rasmussen is commonly associated with the discovery of (A) The olivo-cochlear bundle.

**PAST NEWSLETTERS:** Past newsletters can be found at:

[hearinghealthmatters.org/category/pathways-society/](https://hearinghealthmatters.org/category/pathways-society/)