

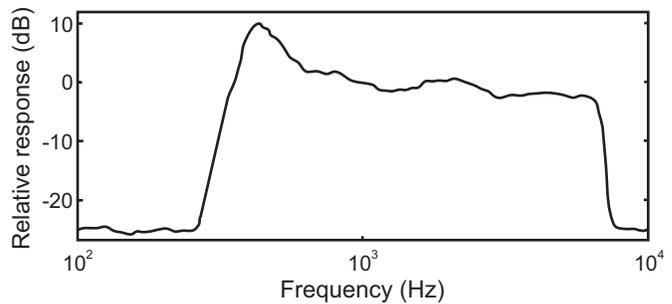
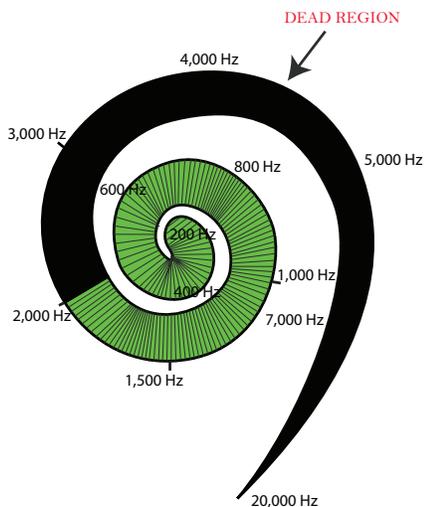
The TEN (HL) Audiometric Test

For Diagnosing Dead Regions of the Cochlea

Frye Electronics is now distributing the TEN (HL) Audiometric test used for diagnosing dead regions of the cochlea. This is an important test that can help the hearing health clinician determine whether or not the patient can benefit from hearing aid amplification when they have a significant hearing loss. Dead regions can be difficult to diagnose using standard pure-tone audiometry.

What is a Dead Region?

A dead region of the cochlea is caused by non-functioning inner hair cells and/or neurons corresponding to a range of frequencies. Sometimes parts of the cochlea normally tuned for other frequencies can pick up sounds within a dead region, leading to pure-tone thresholds that are better than might otherwise be expected within the dead region. This makes dead regions hard to diagnose in a normal hearing test (although hearing loss above 70 dB HL normally indicates a dead region).



If a patient has a dead region, a hearing aid may provide little or no benefit within that region and may actually decrease speech intelligibility. (There are some exceptions with high-frequency dead regions in which amplification may benefit the patient if applied up to 70% higher than the “edge frequency” of the dead region.)

How does the TEN (HL) Test work?

To perform a TEN test, first you obtain the patient’s pure-tone threshold levels between 500 and 4000 Hz using either the tones available on the TEN (HL) CD or by using the built-in tones available on your clinical audiometer.

After the pure-tone audiogram is obtained, the TEN noise is added to each frequency of the pure-tone signal with a level 10 dB above that of the threshold. Both the tone and the noise are presented to the same ear of the patient. If the masked threshold is 10 dB above that of both the threshold and the TEN noise, the cochlea is considered “dead” at that frequency.

The TEN (HL) test was developed at the University of Cambridge by Dr. Brian CJ Moore.



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