RESEARCH EVALUATION:

UNDERSTANDING PATIENT SATISFACTION WITH NEUROTECHNOLOGY™

Family Hearing Center

Hearing & Brain Centers

www.FamilyHearingAidCenter.com

Research Report: Summary

Understanding Patient Satisfaction with NeuroTechnology™

Perspective

Transformative hearing loss treatment options have recently been made available to patients suffering from the impacts of hearing loss. This NeuroTechnology™ is the first hearing loss treatment option to offer the benefits of an enhanced clarity surround sound experience, with noise-canceling features.

Volume-Enhancing Technology: Limitations

Traditional hearing Loss treatment options (i.e. hearing aids) are designed to provide amplification that overcomes a deficit in hearing. This technology, often referred to as 'Volume Enhancing', provides a predetermined amount of amplification (volume) based on the results of a hearing test. This technology has significant limitations. 'Volume Enhancing' hearing aids can provide increased hearing in specific situations, and is typically limited to acceptable performance in one-on-one conversations and in environments with no (or very limited) background noise and interference.

The most significant limitation of volume enhancing technology is the inability to focus on speech and reduce background noise in complex listening environments. The traditional approach to reducing background noise is with 'Directional Microphones'. This essentially means that whenever noise was detected (or the user would push a button to activate the 'noise setting') the side and rear facing microphone would essentially shut off - making any speech from the sides or behind barely audible. The disadvantage to this common method of noise reduction is obvious - the only person the listener could hear would be the person directly across from them. This effect is referred to as 'tunnel' of hearing and is illustrated in Figure 1.

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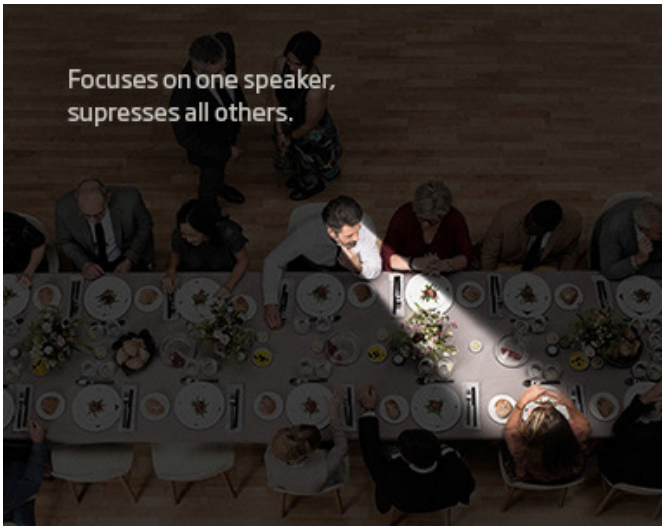
NeuroTechnology™: Clarity-Enhancing with Surround Sound and Noise Cancellation:

Newly developed hearing loss treatment options have made a significant breakthrough in treating the symptoms of hearing loss, not just the hearing loss! The most common symptoms of hearing loss (as reported by patients) are: 1) I can hear that somebody is speaking, but I can't understand every word, and 2) I do okay hearing in one-on-one conversation, but I have a lot of difficulty following the conversation when there is any background noise. These symptoms are the consequence of deprived auditory input to the brain and reduced auditory processing. Newly advanced NeuroTechnology™ was designed to treat hearing loss and directly address these symptoms by using the science of BrainHearing™ to improve auditory processing in people with hearing loss.



The three features of NeuroTechnology™ are:

Enhanced Clarity: Restoring clarity in individuals with hearing loss allows the listener access to difficult-to-hear portions of speech, for example, the 'sh', 's', 't', etc., Traditional hearing aids are not able to accurately reproduce these sounds – making the listening experience artificial (or 'mechanical'). With the patented 'soft-speech' booster and access of sounds across the entire spectrum of speech, the listener no longer has to worry about not hearing their grandchildren / spouse / co-workers.

Surround Sound: Sound comes at us from all directions. NeuroTechnology™ is designed to accurately locate sound in space from all directions. This feature allows the listener to pinpoint the location of sound and provide his/her brain with an accurate 'auditory image' of the world around them. Traditional volume-enhancing hearing aids did not offer the listener auditory cues of depth and height of approaching sound, thus often leaving the listener confused about the location of the source of sounds in the environment. The Surround Sound feature provides the listener with a more 'natural' listening experience in all environments... from nature walks to crowded parties!

Patient satisfaction with traditional 'volume enhancing' hearing aids is, on average, 75%.

Noise Canceling: With hearing loss comes the loss of our 'internal filter' capable of separating speech from background noise (naturally increasing the speech: noise ratio). Significant advances in auditory engineering have paved the way for NeuroTechnology™ to provide noise-reduction features in hearing loss treatments. NeuroTechnology™ powered with BrainHearing™ features can enhance the clarity of speech and simultaneously reduce background noise by almost 10dB (that is nearly a 10 times reduction of background noise!). This 'filtering' of speech from background noise mimics the innate ability to hear in background noise of those individuals with normal hearing. The addition of Surround Sound technology enables the noise reduction feature to work in 360 degrees, and will never go in to 'tunnel hearing' mode and restrict speech from any incoming directions. Figure 2 depicts the features of surround sound technology with noise-reduction

Recent studies have found patient satisfaction with new NeuroTechnology™ hearing loss treatments are above 90%.

Study Design:

This study is designed to quantify the listening experience of adults with hearing loss in a vast array of listening environments when using new NeuroTechnology™. The study is designed to examine the impact of new technology on 2 groups:

- New Users: individuals who have not used a hearing aid before / have not used a hearing aid consistently for the past year
- Previous Users: individuals who have been using hearing aids consistently for more than 6 months

To quantify listening experiences in an array of listening experiences the Abbreviated Profile of Hearing Aid Benefit (APHAB) will be administered at the initial consultation and again after 30 days of using NeuroTechnology™.

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