Researchers at the University of South Florida have invented active sound therapy using specific therapeutic sounds that target sensory deficits and effectively overcome them.

One in eight people in the US, aged 12 years or older, suffer from hearing loss in both ears. The most common complaint, even among people with clinically normal hearing, is difficulty in understanding speech in the presence of background noise or when there are multiple people talking. A growing body of evidence indicates that these complaints may result from specific auditory perceptual deficits.

A similar scope of deficits exists in all sensory domains, including vision, touch, taste and smell. Effective sensory processing involves the extraction, encoding and weighting of input stimulus in a manner that provides an internal neural representation of stimulus features and patterns, or changes in those features and patterns. Sensory deficits, on the other hand, lead to weak or altered internal neural representations of important stimuli.

Scientists at USF have developed an active sound therapy using specific therapeutic sounds which alter the way the central nervous system (CNS) encodes, processes or weights incoming sensory information. It supplements the sensory environment by providing an enriched sensory experience that induces plasticity within the CNS, and effectively overcomes the associated sensory neural processing deficits.

This technology presents a novel methodology for overcoming perceptual auditory deficits by chronically supplementing the sensory experience with important but unnoticeable stimuli. Thus, active sound therapy provides an effective treatment for hearing loss.

ADVANTAGES:

- Enhances auditory perception during daily activities
- Promotes comfort and reduces distraction
- Reduced background noise

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