

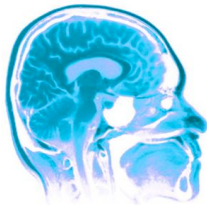
## Hearing loss explained.



The processing of an acoustic signal by the peripheral auditory system can be summarized as follows. A sound signal is directed to the ear canal by the pinna (outer ear). The eardrum responds to the pressure wave by deflecting. This deflection causes the three small bones of the inner ear to move, producing a similar movement in the oval window of the cochlea. This vibration starts a travelling wave in the fluid of the cochlea. The travelling wave produces a peak displacement at some point along the cochlea that is a function of frequency. Inner and outer hair cells then transduce the travelling wave into nerve firings. The loss of these hair cells produces symptoms such as elevated thresholds and loss of frequency selectivity.

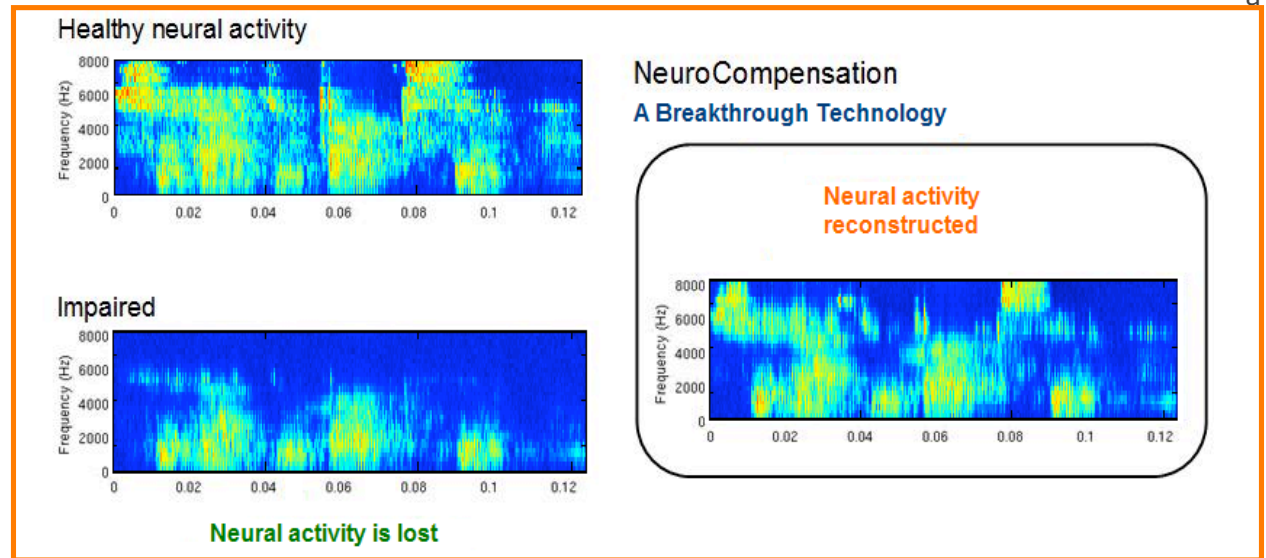
## Hearing-impaired, but 'brain'-smart!

While there is some evidence of reorganization in the human auditory cortex resulting from hair cell damage, there is no present evidence that the basic cortical circuitry does not work. That is, despite the loss of hair cells, the processing in the brain that is eminently capable of segregation, streaming, and decoding, is still able to function properly if the incoming signals are parceled properly.



**Neuro-Compensator™: a unique, patented, breakthrough amplification strategy.**

Our researchers have accurately modeled how an individual's auditory system transforms sounds into the series of electrical pulses that reach the brain. Consequently, our unique amplification strategy does not simply attempt to reach a certain 'target gain'. Its unique amplification algorithm rather enforces



an optimal 'electrical' signal from the nerve to ... the brain, thus the name Neuro-Compensator™. The Neuro-Compensator™ amplifies the audio bands so as to reproduce the near-to-normal neuronal activity in the auditory system, despite the loss of hair cells. The restoration of neural activities results in providing the brain with the optimal stimulus it should receive. The Neuro-Compensator™ ensures that the brain of a patient with a damaged auditory system is fed with an electrical signal similar in strength and quality as those without auditory damage.

## Why is Neuro-Compensator™ so effective ?

The Neuro-Compensator™ is the first technology that is designed to optimize the auditory nerve output and therefore, revolutionizes the quality of hearing aids. Traditional hearing aids calculate gain on

frequency-by-frequency basis without taking into account masking effects due to cross frequency and cross-temporal interactions, and more importantly, with absolutely no model of the auditory nerve. The Neuro-Compensator™ improves hearing aids performance and will significantly increase customers satisfaction.

## Where can I get more information about Neuro-Compensator™?

Please call us at 1.905.760.7755, email us at [info@vitasound.com](mailto:info@vitasound.com), or visit our web site: [www.vitasound.com](http://www.vitasound.com)