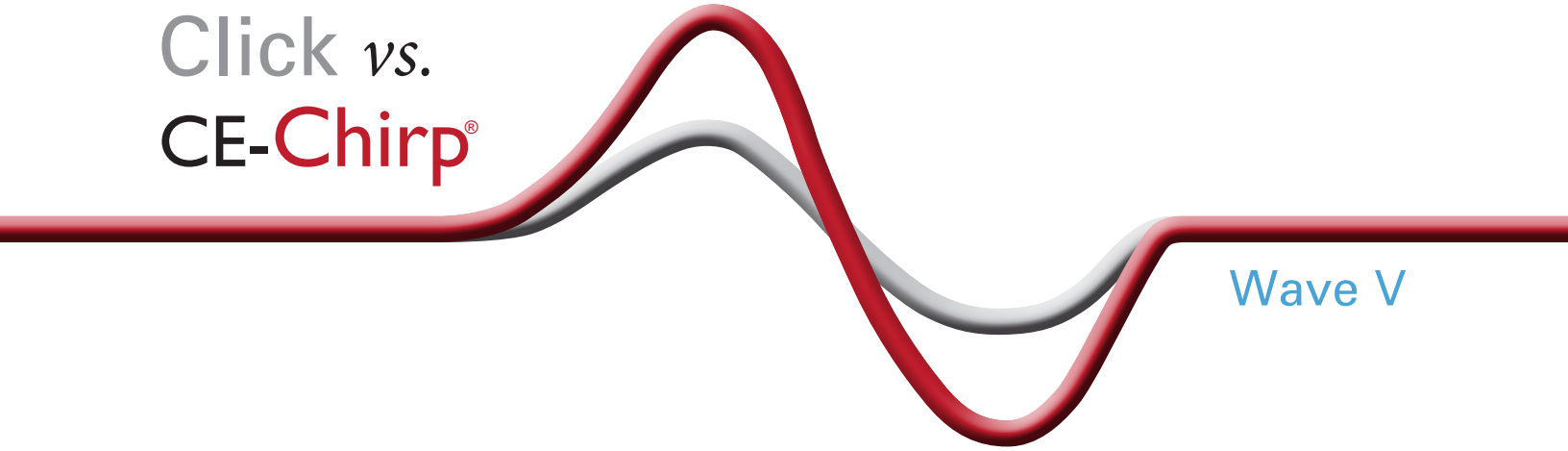
# Amplitude with Attitude

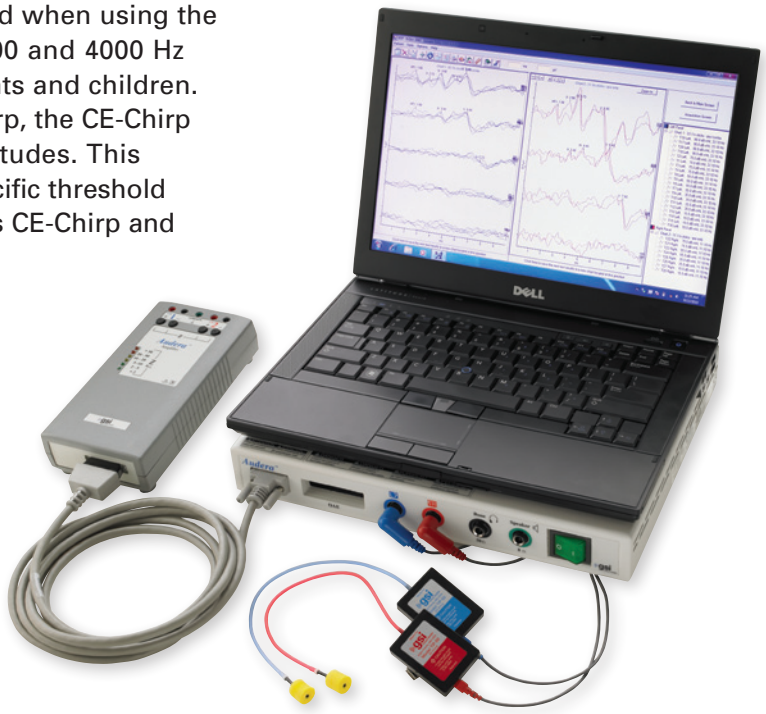
The GSI Audera™ now includes the CE-Chirp® and CE-Chirp Octave Band stimuli as part of the already powerful ABR module. CE-Chirp and CE-Chirp Octave Band patent-pending technology optimizes the simultaneous firings along the basilar membrane resulting in larger Wave V amplitudes compared to traditional click and tone burst stimuli.

**The Results:**
The ABR Wave V is obtained faster and with larger amplitudes which saves clinical time and increases confidence in your ABR results.




Frequency specific threshold testing is improved when using the CE-Chirp Octave Band stimuli at 500, 1000, 2000 and 4000 Hz compared to tone bursts, particularly with infants and children. Using the same technology principles as CE-Chirp, the CE-Chirp Octave Band stimuli elicit larger Wave V amplitudes. This means Wave V identification and frequency-specific threshold estimation is faster and easier with GSI Audera's CE-Chirp and CE-Chirp Octave Band stimuli.

Your patients will benefit from larger Wave V amplitudes obtained with CE-Chirp stimuli. With CE-Chirp and CE-Chirp Octave Bands, you will be successful on more patients faster, with fewer repeat test sessions and with less need for sedation.



**Setting The Clinical Standard**

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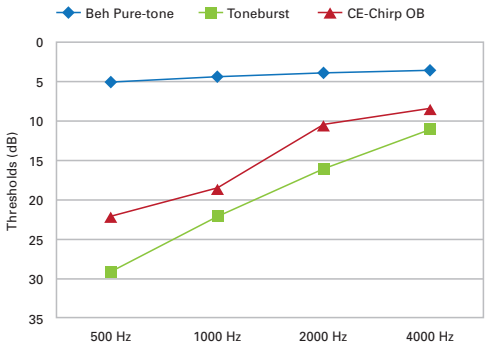
# CE-Chirp Normative Data with the GSI Audera

New normative data obtained with the GSI Audera CE-Chirp has proven clinical efficiency and effectiveness in adults and newborn infants. Adult data shows increased Wave V amplitudes with CE-Chirp. Additionally, CE-Chirp Octave Bands exhibited lower thresholds than tone bursts. Newborn data has revealed increased Wave V amplitudes to air-conduction and bone-conduction stimuli at all intensities, independent of rate and polarity.

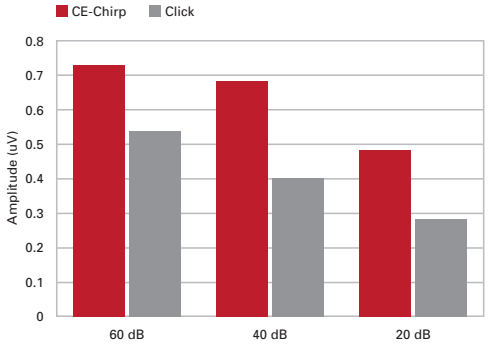
### Adult Amplitude & Threshold Comparisons:

Normative adult data compared CE-Chirp to clicks, and CE-Chirp Octave Band Stimuli to 2-1-2 tone burst stimuli. Significantly larger amplitudes were found for CE-Chirp stimuli compared to clicks at 60, 40 and 20 dB. Significantly larger Wave V amplitudes were found using CE-Chirp Octave Band stimuli at mid and higher intensities. CE-Chirp Octave Band thresholds were lower than tone burst thresholds at all frequencies.

**Adult Threshold Comparison**




**Adult Amplitude Comparison**

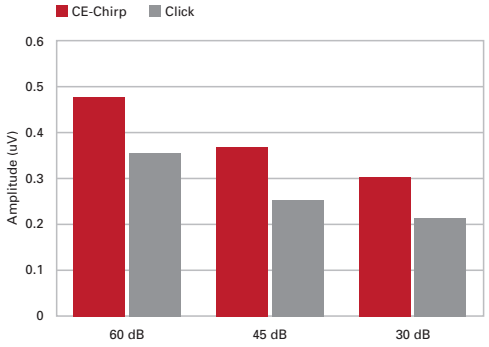



*Reference: Stangl S, Rentmeester L, Hood LJ. (2013). Auditory brainstem responses to clicks, chirps, tone bursts, and octave-band chirps. Poster presented at the 2013 Meeting of the American Auditory Society, Scottsdale, Arizona.*

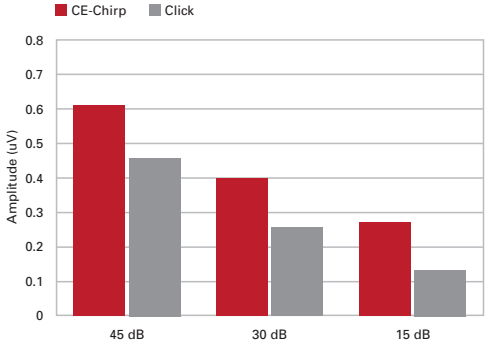
### Newborn Air-Conduction and Bone-Conduction Amplitude Comparisons:

Newborn normative data also showed significantly larger Wave V amplitudes to CE-Chirp vs. click stimuli at 60, 45 and 30 dB. The bone-conducted CE-Chirp stimuli revealed significantly higher Wave V amplitudes at 45, 30 and 15 dB. Significantly higher amplitudes were also obtained for CE-Chirps vs. clicks at low (8.7/s) and high (77.7/s) repetition rates. There was no effect of stimulus polarity on amplitude (rarefaction and condensation).

**Newborn Air-Conduction Amplitude Comparison**




**Newborn Bone-Conduction Amplitude Comparison**




*Reference: Cobb K, Stuart, A. (2013). Auditory brainstem responses to chirp and click stimuli in newborns. Poster presented at the 2013 Meeting of the American Auditory Society, Scottsdale, Arizona.*

**CE-Chirp provides the increased confidence and test efficiencies you and your patients deserve.**

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