PENTAX Medical

Analysis of Dysphonia in Speech and Voice (ADSV™)

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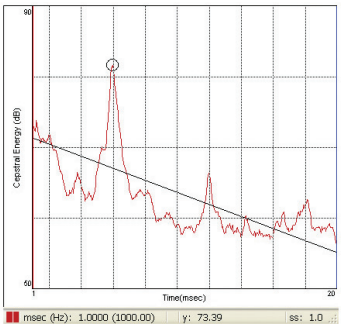
ADSV from PENTAX Medical is the first program of its kind, allowing for voice quality assessment of sustained and continuous speech samples from mildly to severely dysphonic voices. With an easy-to-use, protocol-driven interface, ADSV is the perfect complement to your perceptual evaluation and the well-established Multi-Dimensional Voice Program (MDVP™) analysis.

How does it work?

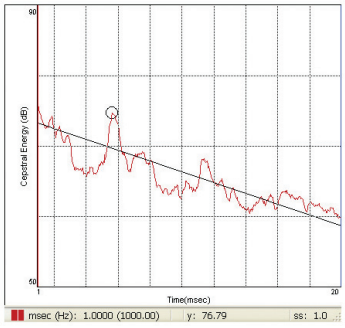
ADSV utilizes spectral- and cepstral-based analyses, which overcome some of the shortcomings of traditional acoustic assessment methods.

Measures of the amplitude of the cepstral peak in relation to extraneous cepstral components have been reported in numerous studies[1, 2, 3] to provide an effective method for quantifying the severity of the dysphonic voice. ADSV uses this measure of the cepstral peak in a well-tested algorithm to calculate the severity of dysphonia in a sustained voice or connected speech sample.

Normal



Moderately Dysphonic



Cepstral analysis results for voice samples rated as normal and moderately dysphonic by trained raters.

APPLICATIONS

- Assessment of connected speech samples using CAPE-V® sentences
- Analysis of sustained vowels including severely dysphonic phonation
- Complements perceptual evaluation and other acoustic measures
- Provides objective data for evidence-based clinical practice

**The CAPE-V was developed by the American Speech-Language-Hearing Association's Special Interest Group 3, Voice and Voice Disorders.*

ADSV offers:

- Easy-to-use protocols including prescribed sentences, providing a more natural sample for voice assessment than the traditional sustained vowels.
- A new measure, the Cepstral/Spectral Index of Dysphonia (CSID™), which has been shown in several studies[2, 3] to have a high correlation with rater's preceptual assessment of dysphonia.
- The CSID is based on the well-established CAPE-V* 100-point assessment scale, which is familiar and understandable to clinicians and patients.

1. Awan, S.N., N. Roy, M.E. Jetté, G.S. Meltzner, and R.E. Hillman, "Quantifying dysphonia severity using a spectral/cepstral-based acoustic index: Comparisons with auditory-perceptual judgements from the CAPE-V." *Clin Linguist Phon, Vol.* 24 (9), pp.742-758, 2010.
2. Lowell, S.Y., R.T. Kelley, S. N. Awan, R. H. Colton, N. H. Chan. "Spectral- and Cepstral-Based Acoustic Features of Dysphonic, Strained Voice Quality." *Annals of Otology Rhinology & Laryngology,* Vol. 121 (8) pp. 539-548, 2012.
3. Watts, C. R., and S.N. Awan, "Use of Spectral/Cepstral Analyses for Differentiating Normal From Hypofunctional Voices in Sustained Vowel and Continuous Speech Contexts," J Speech Lang Hear Res; Vol. 54, pp.1525-1537, 2011.

PENTAX Medical
3 Paragon Drive
Montvale, NJ 07645
Phone +1 800 431 5880
Fax +1 201 391 2063
www.kaypentax.com

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