Analysis of Dysphonia in Speech and Voice (ADSV™)
Model 5109

ADSV from KayPENTAX is the first commercial 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. Spectral- and cepstral-based measures are not dependent on identifying fundamental-frequency cycle boundaries (periodicity), and therefore can provide valid and reliable voice quality assessment of non-periodic samples such as continuous speech samples (sentences) and severely dysphonic voice samples.

Measures of the relative amplitude of the cepstral peak in relation to extraneous cepstral components have been reported in numerous studies 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.

Cepstral analysis results for normal and moderately dysphonic speech samples. In the normal sample, the dominant cepstral peak is substantially greater than the average cepstral amplitude (regression line). In the disordered samples, the relative amplitude of the cepstral peak is decreased and the overall amplitude of other spectral components is increased.

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
Easy to Use

ADSV provides protocols for simple completion of typical therapy tasks, including CAPE-V sentences. Available protocols are as follows:

- Sustained Vowel
- Easy Onset Sentence
- All Voiced Sentence
- Hard Glottal Attack Sentence
- Voiceless Plosives Sentence
- Rainbow Passage (Excerpt)

For those conducting research, many of the parameters of the program can be modified allowing for maximum flexibility; additional functionality, in the form of a Vocalic Event Detection feature, has also been built in to allow for experimentation with this exciting new program.

Easy to Interpret

ADSV calculates the Cepstral Spectral Index of Dysphonia (CSID™) which uses a multi-variable algorithm to quantify the level of dysphonia in a sample. The CSID is based on the CAPE-V 100-point assessment scale and has been shown in several studies to correlate with the perceptual assessment of expert raters. Clinicians can use the CSID in conjunction with other assessment methods to monitor patient performance over time, or before and after therapy or other intervention. Because the CSID is based on the CAPE-V scale, the results are easy to understand and communicate.

ADSV can be purchased as an option with the KayPENTAX Computerized Speech Lab (CST™), Model 4500 or 4150B; Multi-Speech™; Visi-Pitch™ IV; and Sona-Speech™ II software.

For current host computer requirements and operating system compatibility, see our Web site at www.kaypentax.com.

*Dysphonia severity ratings of the expert raters as compared to ADSV showed a strong correlation (courtesy of Dr. S. Awan).

For more information about this and other KayPENTAX products, contact:

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