COMPREHENSIVE DIAGNOSTIC SYSTEMS
FOR SLEEP MEDICINE

Obtain Objective Data to Assist With The Diagnosis And Treatment of Sleep Disordered Breathing

Pharyngometry Landmarks

The Combo Unit combines the Eccovision Acoustic Rhinometer and Pharyngometer into one compact exam room product for total acoustic upper airway evaluations.

Clinical Applications Include:

- Identify site and severity of airway obstruction
- See the effects mandibular advancement has on pharyngeal size
- Determine candidacy for mandibular advancement appliances
- Determine optimal treatment options with objective data
- Compare pre & post treatment results to determine efficacy
- Demonstrate functional and structural abnormalities of the pharynx

FAST & EASY TO USE
OFFICE-BASED SYSTEMS
COST EFFECTIVE
ACCURATE
NON-INVASIVE

Eccovision Acoustic Diagnostic Pharyngometer is a diagnostic system used for objective assessment of the upper airway. The Acoustic Pharyngometer utilizes a patented, state-of-the-art, acoustic signal processing technology to provide graphical representations of airway patency. This dynamic test measures the dimensions of the airway through the oral cavity and 25 cm down the pharynx. The technique is minimally invasive and results are available in real-time. A complete airway evaluation takes minutes and assists the healthcare provider in identifying the site and severity of airway obstruction as well as changes that occur in airway tissues as a result of mandibular advancement or other treatments.

For more details or the latest updates in product specifications and enhancements contact your local area SGS representative.
Pharyngometry

Questions & Answers

By Professor Jeffrey J. Fredberg, PhD - Harvard University

Q. What makes acoustic reflection technology so accurate?
A. Quite simply, the accuracy of this noninvasive approach stems from the two facts that the signal-to-noise ratio is remarkably high, even in the doctor's office, and the laws of acoustics are highly reliable. Taken together, this combination makes for a high-accuracy quantitative diagnostic device. We established long ago, and it has been widely validated by others since then, that the variability that is observed, which is modest, represents true physiological variability of the dynamic structures of interest.

Q. What were your goals when you originally developing these systems, and how did you intend them to be used?
A. We were originally focused upon developing this noninvasive technology to study the small airways of the lung periphery. The technology was thought to be particularly well suited to infants and young children because it requires no subject cooperation.

Q. Did you ever think the Acoustic Pharyngometer would have so many applications with sleep medicine? Why do you think it has been adopted so well in this field?
A. At the beginning, as described above, not at all. In time, however, it became increasingly clear that the main value of the technology would lie in otolaryngology and sleep medicine. Acoustic Pharyngometry has probably been adopted so well because it is simple, fast, reliable, and uses non-ionizing radiation. It is also quantitative, inexpensive and reimbursable. These reasons, taken together, define a niche that cannot be matched by any other screening technology for sleep disordered breathing.

Q. The Acoustic Pharyngometer has proven to be highly predictive of sleep disordered breathing problems as well as predictive of oral appliance efficacy, what are your thoughts on this?
A. The pathophysiology entails airway geometry and airway stability. These physical factors are inescapable determinants of upper airway function, and Acoustic Pharyngometry measures and quantifies them quite easily. The same information can certainly be obtained by CT or MRI imaging, but only at much greater cost.

Q. How can you see equipment being useful in the dental field?
A. In dentistry, the value proposition is simple and revolves around mandibular advancement devices. Instead of guessing, the dentist can use Acoustic Pharyngometry to titrate the amount of mandibular advancement in order to optimize the balance between therapeutic effect on the one hand and patient comfort on the other. The latter is known to impact patient compliance. The patient who leaves the device on the night-table gets no benefit.

Q. Do you have any advice for people first learning how to interpret the volumetric readings?
A. The best approach is simply to play with the device on yourself. The display is intuitive, and after a few minutes the information becomes virtually self-explanatory.

Q. What kind of validation was done during the development process?
A. Our original validations used two-axis radiographic projections, while later validations by others used MRI and CT. Compared with these more costly modalities, all published studies concur that the Acoustic Pharyngometry is no less accurate.

Q. What are the benefits of using acoustics versus something like an endoscope?
A. Endoscopy is an indispensable tool, but is invasive and often requires sedation and/or anesthesia. Acoustic Pharyngometry can be used to rule in or to rule out those patients for whom endoscopy might be indicated.

Q. In the study David Gozal did he was talking about Diagnosing kids for sleep apnea with the Pharyngometer. What do you think about it?
A. Acoustic Pharyngometry is not yet widely used in children. Solid experimental evidence from multiple studies support the idea that Acoustic Pharyngometry is dramatically under-utilized in this important patient population. In this population, airway dimensions during wakefulness have been shown to correlate with sleep disordered breathing.

Q. What universities are using the Eccovision?
A. Over 500 systems are in use worldwide, including those at U Louisville, Harvard U., Case Western Reserve, U Toronto, Albert Einstein, Yeshiva U, U Padova, U Turin, U de Bari, Southern U of Portland, Queen's U., Catholic U. of Korea, Central Hospital of Sweden, Johannes Gutenberg U., U Mainz, U Calgary, U Pennsylvania, Korea University College of Medicine, U Verona.