

# ABSTRACTS

## “2011 Semi-Occluded Vocal Tract Voice Therapy and Diagnostic Techniques Symposium”

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### FLOW IN RESONANCE FOR SPEECH

*Jackie Gartner-Schmidt, PHD*

Associate Professor of Otolaryngology  
Associate Director of the UPMC Voice Center

**Abstract:** A symbiotic relationship exists between flow phonation and resonant voice. It may be impossible to use “good” semi-occluded vocal tract therapies without using “good” flow phonation. Although it has been shown that SOVT therapies favorably change transglottal airflow, perhaps directly paying attention to flow phonation as a “reference sensation” may offer patients a viable way of increasing awareness of voice production. This presentation will highlight this interrelationship between flow phonation and resonant voice, as well as focus on the ultimate goal of transfer. Motor movements for speech may involve much more widespread coordination across the systems than needed in most isolated SOVT non-speech tasks. Transferring the sensory references obtained via SOVT therapies should be taught very early in the therapeutic process.

### ALTERATIONS IN GLOTTAL CONTACT QUOTIENT WITH A CONSTRICTED OR LENGTHENED VOCAL TRACT

*Chris Gaskill, PhD, CCC-SLP*

The University of Alabama

**Abstract:** Four studies by the author will be summarized in which glottal contact quotient (CQ) was measured with dual-channel electroglottography (EGG), before, during and after a brief period of phonation using either a lip trill or a resonance tube. Comparisons between untrained participants and trained singers as well as mode of practice with each technique were made. Traditional group analysis of the data shows little significant change in glottal CQ, but analysis of single-subject data reveals more robust changes and considerable inter-subject variability that should be considered and studied further to improve the application of semi-occluded vocal tract techniques.

### THERAPY METHODS

*Fr. Dr. Paul Poovathingal CMI*

Founder and Director of Chetana National Institute of Vocology, Thrissur, India

**Abstract:** Therapy methods: 1. Muscle activation  
2. Muscle reconditioning  
3. Pranayama (Yogic breathing exercises) - Indian method of breathing

Software used for voice analysis: Vaghmi (developed in India by voice scientist Dr. Anandapadmanabha). There are modules to measure and analyze Maximum Phonation Duration (MPD) and puzzles to improve the lung pressure and vital capacity of the patient. Software to measure nasalance scores of the patient, measure fundamental frequency, for musicians to balance voice with corresponding notes.

Other techniques used are: Mouth opening, Tongue extension, Tongue oscillation, Tongue rotation, 'Shick' sound (activation of abdomen area gives correct voice production ambience), Yawning, Lip trill, Tongue trill, Humming, vowel extensions.

Our methods are extremely successful in its application. We use these methods for patients with vocal nodules, phonatory gap, puberphonia, unilateral and bilateral vocal chord paralysis etc.....

According to our case studies most of the voice patients are suffering either due to weak breathing or wrong breathing. Therefore we teach them Anuloma - Viloma Pranayama (Alternative nostril breathing) and Bastrika( Bellows breathing) pranayama. When lung pressure improves from 4-5 secs to 15- 20 secs, muscular tensions in voice production disappear. In our therapy methods we concentrate on three major parts of voice production such as Activator, Vibrator and Resonator. According to indian system of pranayama, if it is practiced regularly, blood circulation in the vocal muscles area and respiratory system will increase. On account of that vocal fold tissues and other supporting vocal muscles including cartilages will function smoothly. According yoga system regular pranayama will cleanse the veins of human body. Deep breathing or diaphragmatic breathing will pump more oxygen into body and once oxygen intake increases, blood circulation also increases. With these methods we have improved the voice production capacities of bilateral and unilateral vocal fold paralysis patients and other voice patients remarkably.

We have also follow up methods in therapy. Patients continuous visit to the institute helps them to learn deeply the correct methods of voice production.

## **LAX VOX TUBE AND WATER FOR OPTIMAL VOICE**

**Abstract:** Marketta's LAX VOX tube aimed voice care method, a combination of a silicone tube and water, works as a handy tool improving the functions of the voice production apparatus. It creates holistic cognition of the vocalizing process by biofeedback due to increased supraglottal pressure and artificial elongation of the vocal tract. The 'domino effect' proceeds from lowered larynx to ideal posture and proper respiration. Therefore *Laxvoxing* suits all speakers and singers who wish to learn voice ergonomic and daily voice care. The workshop includes theory and practice and gives experiences of the effects of this tool.

### **MECHANISM OF LAX VOX VOICE THERAPY TECHNIQUE (LVVT) – BRIDGE FROM THEORY TO PRACTICE**

*Ilter Denizoglu, MD, Laryngologist*

Director of Voice Clinic, Alsancak State Hospital ENT Department, Izmi, Turkey

**Abstract:** Dysphonic patients' muscle tensions urge doctors and therapists to find ways to guide patients to recognize and control voicing effortlessly. The therapy aspects are medical and behavioral; health of the system, and balanced interactions of posture, breathing, and voice generation. Laxvoxing is an easy way to create the known ideal conditions of phonation process by using the laws of biophysics and medical therapy procedures. LVVT is a therapy of choice for various functional and organic voice disorders. It is also suitable for professional voice users; providing several advantages for developing primal sound, registers, passaggio, glottal attack, etc. It corrects all aspects simultaneously, teaching voice control by biofeedback.

## **EFFECT ON LONG-TERM AVERAGE SPECTRUM OF VOCAL FUNCTION EXERCISES IN SINGERS WITH NORMAL VOICES**

*Marco Guzman*

University of Chile, School of communication disorders.  
Fundacion Iberoamericana de voz cantada y hablada (FIVCH)

**Abstract:** Vocal function exercises have been designed to strengthen and tone the muscles of the larynx and supporting muscles to enhance vocal function. One session of vocal function exercises program was applied in thirty choir singers with normal voices. Voice samples were recorded before and after the exercise sequence. Recording tasks were to read a phonetically balanced text, to sustain vowels, and to sing happy birthday. Acoustic proportion, singing power ratio and spectral balance. Significant changes were obtained in some LTAS proportions. Result indicates that vocal function exercises have and immediate effect in singers with normal voices.

## **USING SEMI-OCCLUDED VOCAL TRACT TECHNIQUES WITH PATIENTS DIAGNOSED WITH MUSCLE TENSION DYSPHONIA**

*Ann Fennell*

**Abstract:** Clinical cases will be presented demonstrating the use of straw phonation used in conjunction with Lessac-Madsen Resonant Voice Therapy during the treatment of patients with muscle tension dysphonia.

## **SPEAKER DIFFERENCES IN LARYNGEAL ACTIVITY**

*Troy Clifford Dargin*

PhD Student, University of Kansas, Speech Language Pathology

**Abstract:** This study describes within speaker differences in laryngeal activity as a function of hums, voiced lip trills, voiced raspberries, and sustained vowels produced by 10 singers. Flexible fiberoptic laryngeal endoscopy/stroboscoty is completed along with electroglottography (EGG). Closed quotient (from EGG) and glottal configuration, mucosal wave characteristics, and other laryngeal activity (from imaging) will be compared within singer across tasks. CQ is expected to be reduced and glottal configuration more open during semi-occlusion tasks; there is not a clear expectation about whether the three semi-occlusion tasks will influence laryngeal activity similarly within or across singers.

## **ARE ALL LIP TRILLS, RASPBERRIES AND OTHER SEMI-OCCLUDED VOCAL POSTURES EQUALLY EFFECTIVE?**

*Brian Gill*

Department of Music and Performing Arts Professions  
NYU Steinhardt School of Culture, Education and Human Development, USA

**Abstract:** This discussion will focus on how to teach someone how to perform many of the semi-occluded vocal tract postures, including the lip trill, raspberry (upper and lower lip), tongue trill, nose pinch, and standing wave (a device employed by the late Dr. Barbara Doscher). Based on information gathered over two decades of teaching voice, this talk will cover common challenges experienced by

singers attempting to employ these voice training tools as well as specific training techniques used to elicit their most efficient application.

## **IMMEDIATE EFFECTS OF A VOCAL EXERCISE SEQUENCE WITH RESONANCE TUBES**

*Marco Guzman*

University of Chile, School of communication disorders. Fundacion  
Iberoamericana de voz cantada y hablada (FIVCH)

**Abstract:** Vocal exercises with partial occlusion or lengthening of the vocal tract have been widely used in voice therapy and training. A sequence of four phonatory tasks with resonance tubes was applied in twenty-four teachers with hipofunctional dysphonic voices. Samples were recorded before and after the exercise sequence. Acoustic analysis included Cepstrum, Jitter, Shimmer and NHR. Subjects were asked to fill out a vocal self-assessment protocol after the exercises to assess the subjective effects. Significant changes were obtained in acoustic parameters. Voice exercises with resonance tubes have an immediate therapeutic effect in subjects with hoarse voices and a subjective perception of improvement in voice production.

## **BREATHING THERAPY AND PARADOXICAL VOCAL FOLD MOVEMENT**

*Miriam van Mersbergen, Ph.D., CCC-SLP*

Norther Illinois University

*Elizabeth Platt, M.A., CCC-SLP*

Private Practice

**Abstract:** Breathing therapy for PVFM has been traditionally described as “relaxed throat breathing” (Mathers-Schmidt, 2001). Implicit in the goals of these therapies is to achieve a wide-open glottis. A wide-open “relaxed” glottis may not be realistic goal or a beneficial one according to vocal theories of semi-occluded vocal tracts. Pursed lip breathing can quickly facilitate efficient breathing and inhibits accessory muscles of breathing suggesting that back-pressure of the semi-occlusion are ample enough to overcome maladaptive breathing strategies. This descriptive talk will demonstrate the benefits of semi-occlusion by showing what happens to the glottal area during increased exercise using semi-occluded vocal tract techniques.

## **TRAINING THE USE OF THE 'NG' TO MAINTAIN A DISCREET EPILARYNX TUBE**

*Deanna Pond*

Boise State University, Treasure Valley Voice Care Team

**Abstract:** The nasal continuant 'ng' may be used to sense and manipulate the structures of the voice at the level of the epiglottis, tongue root, and vallecular space. By so doing, the epilarynx tube may remain discreet and undisturbed by the necessary movements of the tongue proper during speech and singing. Specific vocalizes and necessary coaching will be outlined. Spectrograms and recorded samples may establish the tonal differences.