

## **Speech-Language Pathology and the Disordered Singing Voice:**

**Development of a Clinician-Friendly Assessment Protocol for the Injured Singing Voice  
...even for the NON-SINGING SLP**

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### **Disclosure:**

The author has no financial or nonfinancial relations relevant to the content of this presentation

### **What this presentation will provide:**

- An overview of some of the challenges involved with working with the injured singing voice
- Discussion of the areas to assess in the singing voice
- Overview of current existing tools
- Discussion of a proposed assessment protocol for the singing voice
- Audience participation in protocol tasks and live demonstration of use of the protocol with a volunteer singer

### **Objectives:**

By the end of this presentation, attendees will be able to:

- Identify key areas to assess when working with a singer
- Identify and describe self-perception and analysis tools currently available for use with singers
- Describe the process of administration of a Singing Voice Assessment screening protocol.

**So, why worry about singers?**

### **Singers in the SLP caseload:**

- Singers may show up on the SLP's caseload in a variety of settings
- Singers can be found within populations from pediatrics to geriatrics
- Singers rely heavily upon their voices for their livelihood, and voice problems can have a significant impact on psychosocial well-being and quality of life (Broadus-Lawrence et al. 2000)

But I'm a speech pathologist, not a singer! What can I do?  
...What SHOULD I do?

### **Who SHOULD work with the injured singing voice?**

- There has been much discussion in the literature as to WHO should work with the injured singing voice...voice teachers, or speech-language pathologists?
- While no firm conclusions have been made, ASHA has developed guidelines for some of the qualifications and training needed.

### **Who DOES work with the injured singing voice?**

In a study by Field & Hapner presented at the Voice Foundation's 2006 Annual Symposium, it was found that many SLPs specializing in voice and singing teachers do work with singers with voice disorders, despite having extra qualifications such as:

- Additional degrees in music
- Voice lessons
- Professional performance experience

### **Fields & Hapner (2006) findings:**

- Of the 156 SLPs specializing in voice, they found that additional degrees, professional singing experience, and voice lessons **do not predict** that an SLP will treat the disordered singing voice (they treated anyway).
- Of the 106 Singing Voice Teachers, advanced degrees in voice and lessons **do not predict** the likelihood of treating the disordered singing voice, but professional performance experience **did predict** the likelihood of treating the disordered singing voice.

Food for thought: In both groups, it was found that SLPs and voice teachers were treating the disordered singing voice...but, should they? What qualifications are needed?

### **Speech-Language Pathologists:**

ASHA Statement (2005): It is recommended that "the preparation of the speech-language pathologist who works with singers...needs to be augmented to include instruction in vocal pedagogy (the art and science of teaching voice) and vocal performance to develop both the singing voice and speaking voice to optimal levels of health, performance, and artistry."

### **Singing Voice Teachers:**

- At present, there are no formal training programs in the United States that teach singing teachers to work with injured voices...It is illegal in most states for a singing teacher to provide therapy for an injured or pathological voice unless he or she meets state licensure requirements, most of which are equivalent to certification by the American Speech-Language-Hearing Association (ASHA)" (Emerich et al 1998)

### **Suggested training:**

- Radionoff (2004) suggests coursework for a master's program in Arts Medicine, which includes elements of vocal pedagogy, music education, performance studies and music psychology to supplement courses in speech pathology.

### **The Singing Voice Specialist (SVS):**

- The singing voice specialist has been described as a "singing teacher with special training equipping him or her to practice in a medical environment with patients who have sustained vocal injury" (Heman Ackah 2002, c.f. Radionoff 2005).
- The SVS will usually have a degree in vocal performance or pedagogy, specialized training in vocology, professional voice performance experience, training in anatomy and physiology, training in the rehabilitation of injured voice users, and other special education.

### **But...that's not me! Now what?**

- Many SLPs may still be called upon to assess the injured singing voice in the school, medical, or private practice clinic
- So, SLPs will need to have an understanding of what parameters to assess, what existing tools are out there, and how to go about conducting a singing-specific evaluation in addition to assessment of the speaking voice.
- Understand when to make referrals to qualified singing voice specialists as necessary

### **What do we know about assessing the singing voice?**

- **Sataloff (1987)**: physical examination of singers, general guidelines
- **Bastian et al (1990)**: simple tasks for detecting vocal fold swelling
- **Jamison (1996)**: considerations for evaluating the exceptional adolescent singing voice (guidelines)
- **Elias et al (1997)**: variability in stroboscopy for healthy singers
- **Oates et al (2005)**: auditory-perceptual rating instrument for the operatic singing voice
- **Cohen (2007, 2008)**: Singing Voice Handicap Index (discussed further later)
- **Fowler & Morris (2007), McCrea & Morris (2007), and Rothman et al (2001)**: Acoustic differences between singers and non-singers (VOT, F0 Nasalance, etc.)

### **Some existing tools for singers:**

- Bastian et al (1990) proposed simple vocal tasks for detecting vocal fold swelling in singers. These tasks were found to be sensitive to even subtle changes in vocal performance in singers, were easy to administer, low-tech, and could be used by the singer to monitor vocal functioning on a day-to-day basis.
  - Low intensity, high-frequency, precisely repeated short-duration tones ("staccato" task), sung in a descending 5-note pattern with repeated top note.
  - Low-intensity, high-frequency, connected legato tones ("Happy Birthday" task), singer does the first phrase in a light "boy soprano"-type style.

### **Some existing tools for singers:**

- Oates et al (2005) developed an auditory-perceptual rating scale for the evaluation of the operatic singing voice. The perceptual parameters assessed were:
  - appropriate vibrato
  - ring
  - pitch accuracy
  - evenness throughout the range
  - Strain
- This scale was designed only to assess the classically trained voice, and therefore may not be appropriate to use with non-classical singers
- The scale also does not necessarily identify specific areas of need or elaboration on the nature of the deficit(s) perceived.

### **Bottom line:**

- Although there are existing tools that assess certain aspects of the singing voice, there is no widely accepted, validated tool for use by speech language pathologists to assess the injured singing voice
- There are no standards for what the SLP should assess and if the SLP should assess
- So, what do we do with our singing voice patients who improve their speaking voice but still can't sing....?

### **Typical parameters to assess in the singing voice**

### **From the singing literature (Vennard 1967):**

- Vocal Pedagogues such as Vennard (1967) often discuss parameters of vocal production in the non-disordered singing voice such as:
  - Breath and breathing
  - Vocal range or coordination of the vocal registers (sometimes referred to as "registration")
  - Quality of tone, including vocal timbre and resonance
  - Loudness or intensity of voice
  - Posture
  - Flexibility of voice
  - Attack (how a singer launches/begins a tone)
  - Vowels and Articulation

### **From the singing literature (Miller 1996):**

- Miller (1996) discusses many of the same parameters, but addresses others as well, including:
  - Attack or onset
  - Breath management
  - Flexibility of voice
  - Resonance
  - Loudness or intensity of voice
  - Unifying the registers
  - Vowel modification
  - Vibrato

### **Breath and Breathing**

Optimal posture for singing: what to look for.

- Upper torso
- Shoulders
- Back
- Alignment
- Stance (including legs/knees)

### **Vocal Range or Registration**

- Registers in the voice were described by Garcia as series of notes produced with the same quality.
- Herbert-Caesari stated that each note is ultimately a register unto itself, as each note will have an exact length, thickness, and tension for that exact acoustic pitch.
- Vennard (1967) describes coordination of the vocal registers

### **Quality, Timbre, and Resonance**

- More difficult to define, lack of agreement among professionals

### **Loudness or Intensity**

- Perception (loudness) vs. decibel meter levels (intensity)

### **Posture**

- How does the singer hold their body when speaking/singing?

### **Flexibility**

- Sometimes referred to as agility, ability to “move” voice quickly from note to note

**Existing tools for assessing the singing voice**

### **Voice Range Profile or Phonetogram:**

#### **Voice Range Profile or Phonetogram**

- Has been applied in the literature to assess the voices of singers

#### **Melton-Van Mersbergen UW-Madison Voice Range Profile-Sparse Protocol:**

- **As presented by Melton at the Voice Foundation Annual Symposium in 2007, this protocol is designed to be faster to administer, less fatiguing for patient, but still maintains the shape of the full VRP**

### **Singing Voice Handicap Index (Cohen et al 2007)**

- Administration
- Scoring
- Scale
- Pre- and Post-therapy measures

### **Proposed Singing Voice Assessment Protocol**

Striving for Low-Tech and  
Clinic-Friendly in the Fast-Paced World of  
Speech Pathology

### **Components of the assessment/screening:**

Thorough case history important

May utilize the Singing VHI and/or the Voice Range Profile

Singing voice screening protocol

### **Singing Voice Assessment Screener:**

Tool originally developed at the Emory Voice Center

- What it is
- What it looks at
- How to administer
- Time in administration
- How to use the results (how it may guide therapy)

### **Demonstrations**

The assessment protocol in action

**Question and Answer:**

**Contact:**

For a copy of this presentation or if you have questions, please email or call:

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