

*College of Arts & Sciences
Interdisciplinary Colloquium
March 31, 2011 – 5:00 p.m.– 6:30 p.m.
4th Floor Boardroom
Warde Academic Center*

*Ensuring a Healthy Speaking Voice for
Ourselves and Our Future Educators*

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Communication Sciences & Disorders*

Anyone interested is invited to attend!

A stylized illustration of a bright yellow sun with a blue circle in the center, partially obscured by blue and white clouds. The background is a solid blue color with a subtle pattern of lighter blue squares.

Food for thought . . .

Your voice provides a strong
message about you.



Food for thought . . .

“Listeners may react more
to how you sound than
to what you say.”

Daniel R. Boone, Ph.D., 1991



Food for thought . . .

- Your voice cannot be neglected
 - To work well, your voice needs care and attention
 - Avoid voice failure



Is this important for me?

- Unhealthy speaking habits can
 - damage vocal folds, requiring therapy, possible surgical repair, and weeks of recovery time
 - result in less effective communication
 - lead to an undesired change in career



Who is at risk?

- Educators and Future Educators who:
 - Speak at less than optimal pitch level
 - Are dehydrated
 - Find it necessary to “clear throat” frequently
 - Have difficulty projecting their voices appropriately
 - Don't use enough air to support vocal projection



Why study this?

- Some of our colleagues have already suffered the effects.
- Many of our student teachers have suffered the effects.
- Our future educators and professional voice users are at risk!
- We want to prevent damage and teach excellent speaking habits to avoid future problems.
- We can prevent problems with interventions!



Background

- Music and Speech Language Pathology students enter our programs with unhealthy vocal hygiene and speaking habits
- Music Education Student Teachers frequently develop laryngitis during initial weeks of teaching.



Background – Spring 2010

- First screening of SXU Singers, Music Education majors, SLP students
- Voice Improvement Program developed for students who failed the screening process
- Post program data collected, and further development of program, which is currently in progress.



Background – 2010-2011

- Screening of new SXU Singers, Music Education majors, SLP students continues each semester
- 6 week Voice Improvement Program (VIP) is available to students who fail the screening process
- New VIP II program for those who need more help - available in Spring 2011

Vocal Health (K.V. Abbott, 2008)

Principle 1: Keep the vocal folds moist

Hydration (internal moisture)

- **Why hydrate?**
 - less effort required
 - may increase resistance to injury
- **How to hydrate**
 - Drink water
 - Avoid caffeine & alcohol

Vocal Health (K.V. Abbott, 2008)

Principle 1: Keep the vocal folds moist

Humidification (external moisture)

Enemies

(too little, too much moisture)

breathing dry air

mouth breathers

smoking

air travel

inhaled medications

How to add moisture

vaporizers

humidifiers

steam inhalers

shower steam



Vocal Health (K.V. Abbott, 2008)

Principle 2: Replace Negative Voice Behaviors:

Vocal Abuse, Misuse and Overuse

- Speaking too loudly or too softly
- Using too high or too low pitch
- Running out of air
- Talking too much
- Speaking too low in your throat
- Straining your voice
- Habitual throat clearing or coughing



Vocal Health

- Hoarseness is a sign of damage to the tissues of your vocal folds
- Persons may have learned inappropriate vocal behaviors that may need to be changed

Vocal Health (K.V. Abbott, 2008)

Principle 2: Replace Negative Voice Behaviors:

Vocal Abuse, Misuse and Overuse

Behavior

Speaking too loudly →

Habitual throat clearing or coughing →

Talking too much →

Straining your voice →

Running out of air →

Pitch too high or too low →

Replacement

Move closer to listener

Move to quiet location

Squeeze (silent cough), then swallow

Sniff-swallow

Take sip of water

Vocal naps

Easy onset

Learn & use proper breathing

Consult a speech pathologist



The Healthy Natural Voice

- Most efficient
 - Supported by good posture and breath support
 - Uses a proper amount of effort to achieve the maximum outcome
 - Does not require “pushing” or excess effort
- Works well and does not fatigue
- Is relaxed: not tense, strained, or breathy
- Does not draw attention



Medical Conditions Affecting Voice

- Laryngeal Pathology
- Neurological Disorders
 - Parkinson's, Stroke, MS
- Hormonal Disorders
- GERD, LPR

What is Laryngopharyngeal Reflux (LPR)?

- **Backflow of acid into the esophagus, throat and voice box**
- **Causes:** lower esophageal sphincter (band of muscle) is not functioning well
- **Very common among singers, instrumentalists & other professional voice users** because of the “support” required to sing, play an instrument or project the voice



Symptoms of Laryngopharyngeal Reflux (LPR)

- Hoarseness
- Thick or too much mucous
- Chronic throat irritation (feels like something is stuck, or there is a “lump” in the throat)
- Chronic throat clearing
- Heartburn (*Many do NOT have this symptom!*)
- Chronic cough
- Cough that wakes you from your sleep



Preventing Laryngopharyngeal Reflux (LPR)

- **Do not smoke.** Smoking will cause reflux.
- **Avoid tight fitting clothes around the waist.**
- **Avoid eating three hours prior to bedtime.** In fact, avoid eating a large meal at night.
- **Weight loss.** For patients with recent weight gain, **shedding a few pounds is often all that is required to prevent reflux.**



Preventing Laryngopharyngeal Reflux (LPR)

- **Foods to avoid:** caffeine, cola beverages, citrus beverages, mints, alcoholic beverage (particularly at night), cheese, fried foods, eggs and chocolate.
- For patients with more severe symptoms, it is helpful to **sleep with the head of the bed elevated**. Six inches of bed elevation will decrease reflux significantly.



Medications and the Professional Voice User

The Good:

- **Mucolytic Agents (Guaifenesin, Mucinex)** - expectorant and vasoconstrictor, thins and increases secretions - some drying may occur
- **Topical Nasal Sprays (Beconase, Vancenase, Rhinocort, Nasacort, Flonase)** - no apparent harm to voice, reduces nasal and nasopharyngeal edema, may reduce airborne allergy sensitivity



Medications and the Professional Voice User

The Good:

- **Gastroenterologic Medications** (antacids, omeprazole magnesium) - useful in the treatment of gastric acid reflux laryngitis, occasionally cause drying effects
- **Saline Nasal Sprays (with and without Xylitol)** – Gently moisturizes nasal passages, washes away pollutants, pollens, irritants; Xylitol is a natural sugar that kills bacteria and viruses. It also helps prevent dental caries!



Medications and the Professional Voice User

The Bad:

- **Antihistamines** (Benadryl, Chlor-Trimeton, Allegra, Claritin, Vicks Formula 44, Robitussin DM) – **tremendous drying effect on upper respiratory tract secretions**, OTC's may have a sedative effect; those containing **codeine are especially drying unless balanced with a wetting agent like guaifenesin**



Medications and the Professional Voice User

The Bad:

- **Topical Laryngeal Sprays** [diphenhydramine (Benadryl) oxymetazoline (Afrin)] - not recommended due to analgesic effect, very effective for severe edema immediately prior to performance—better at restoring speech than singing!



Medications and the Professional Voice User

The Bad:

- **Antihypertensives** (many on the market) - Almost all dry mucous membranes of the upper respiratory tract, especially if they contain a diuretic agent
- **Those who must use these, must rehydrate frequently!**



Medications and the Professional Voice User

The Ugly:

- **Diuretics** (hydrochlorothiazide (Didronal, Dyazide))
 - Dehydrate singers & speakers!
- **Caffeine** (coffee, tea, certain soft drinks)
 - Can be powerful diuretics and produce the same effects as diuretic medications



Medications and the Professional Voice User

o The Ugly:

- o Steroid Inhalers (Flovent, Vanceril, Beclovent) - dysphonia occurs in up to 50% of patients due to aerosolized steroid – may cause wasting of the vocalis muscle!*



SXU Voice Improvement Program

January 2010 – November 2010

- **Purpose:** Identify, educate and improve the speaking voice of college students demonstrating
 - Excessive glottal fry
 - Too high or too low pitch
 - Vocal abuses
 - Speaking on residual air



SXU Voice Improvement Program

January 2010 – November 2010

○ Target Population

○ SXU Students

- Vocal Performance majors

- Music Education majors

- Speech-Language Pathology Graduate Students



SXU Voice Improvement Program

January 2010 – November 2010

○ Research Questions

- Does participation in a voice improvement program improve vocal hygiene and voice use in college students?
- Are the effects of vocal hygiene education and vocal exercises perceived as beneficial?



SXU Voice Improvement Program

Methods – Screening

- Self-report of symptoms
 - Questionnaire
 - Voice Handicap Index
 - Singer's Voice Handicap Index
- Perceptual rating
- s/z ratio (normal =1.0)
- Acoustic measures using computer (Visi-Pitch)



SXU Voice Improvement Program

Methods – Screening

Screening failure = Atypical findings
on 2 or more measures



SXU Voice Improvement Program

Methods – Intervention Program

6 weeks, 60 minutes/wk

- vocal hygiene education
- voice exercises

Post-program evaluation

- Re-screening
- Survey

6 Month Follow-up

- Re-screening
- Survey



SXU Voice Improvement Program

Results

- 8 students completed post-program evaluation
- s/z ratio 4/5 participants with abnormal findings improved
- Acoustic measures
 - Pitch 7/8 improved
 - Other acoustic measures (jitter, shimmer, NHR, VTI)
 - 7/8 improved in at least 2 of the 4 acoustic measures
 - 4/8 improved in at least 3 of the 4 acoustic measures
 - 2/8 improved in all 4 acoustic measures



SXU Voice Improvement Program Post-Program Results

○ Perceptions

- Participants' perceptions
- Researchers' perceptions

○ Program Evaluation



SXU Voice Improvement Program Results Summary

- Participants' perceived benefit
- Majority of participants demonstrated improvement in
 - acoustic measures
 - perception of voice
 - majority reported that the VIP was beneficial in improving vocal hygiene
- Researchers perceived improvement in voice quality and pitch in 3 participants post-program



SXU Voice Improvement Program

6 Month Follow-up

- 5 participants: 2 vocal performance majors, 2 music educators, 1 SLP

At 6 months post-program:

- 1 reported continued improvement
- 2 remained unchanged since post-program
- 2 declined



SXU Voice Improvement Program

Qualitative Data: 6 month follow-up

○ SLP student

- Increased hydration, reduced vocal abuses
- Used gestures
- Does not use efficient breathing pattern

○ Vocal Performers

- One reported high stress levels; c/o breathing & swallowing issues (referred to G-I); uses vocal warm-ups
- Other reported increased breathing awareness; seen by ENT with normal results



SXU Voice Improvement Program

Qualitative Data: 6 month follow-up

- Music educators
 - Both student teaching
 - Increased hydration
 - Female: vocal fatigue, awareness of lower pitch and glottal fry
 - Male: frequently warms up; uses forward resonance for voice projection; increased awareness of glottal attack; uses loudness techniques



SXU Voice Improvement Program

References

Abbott, K.V. (2008). *Lessac-Madsen Resonant Voice Therapy*. San Diego, CA: Plural Publishing.

Bickel, J.E. (2008). *Vocal Technique: A Physiologic Approach for Voice Class and Studio*. San Diego, CA: Plural Publishing.

Boone, D.R. (1991). *Is Your Voice Telling on You?* San Diego, CA: Singular Publishing Group.



Preparing your voice to speak or sing

- Prepare your lungs to inhale fully, and utilize the air flow and air pressure to support your voice
- **Exercise:** Inhale as though drinking in a thick milkshake through a thin straw, pulling the air deeply into your lungs
- Blow the air out powerfully as you produce the sound “S” for as long as you possibly can.
- Repeat two more times.



Vocal Function Exercises

Vocal Function Exercises should be done each day before you teach a class.

Produce the sounds as softly as possible with an easy onset (initiation of sound) and forward placement of the tone (avoid a swallowed or dark vocal sound).



Vocal Function Exercises

1. Sustain the vowel sound "eee" for as long as possible on the musical note F above middle C for women, below middle C for men. Produce the tone as softly as possible, without breathiness. Take a full breath before you begin.

The "eee" should be produced with a very "forward" focus; almost, but not quite nasal. Sustain the sound without breaks for as long as possible.

Sustain an "eee" as long as possible



Vocal Function Exercises

2. Glide from the lowest tone you can produce to the highest tone and back (Siren) on the consonant “L.”

Your voice should be soft, and almost nasal. If “breaks” occur, continue to glide without hesitating.



Vocal Function Exercises

3. Glide from a comfortable high note down to your lowest note (Siren) and back again on the consonant “L.”

Your voice should be soft, and have a forward focus. If breaks occur, continue to glide without hesitating.



Vocal Function Exercises

4. Sustain the musical notes C-D-E-F-G, each as long as possible on the consonant “L.”

Lips should be rounded; a sympathetic vibration should be felt on the lips.

Start on a comfortable pitch (near your speaking pitch) and move up comfortably.

Thank you for Listening and Participating!

◊ We will be happy to discuss or take questions!

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