

**Relieve the Wheeze: The Secret of the Sports Whisper**  
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**Disclosures**

- ▶ No financial relationships

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**Objectives**

- Review of components of the speech evaluation
- Overview of treatment strategies in the literature
- Breathing technique workshop

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### Speech Language Evaluation

|  |  |
|--|--|
| Why am I here?   | Lengthy discussion/description of the disorder |
| Voice Measures:<br>Maximum phonation time<br>s/z ratio | Description of paradoxical vocal fold motion   |

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### Checklist of Symptoms

- ✓ Tightness in Chest or Throat
- ✓ Presence of Stridor
- ✓ Absence of wheezing
- ✓ Trigger of exercise
- ✓ Only 1 trigger
- ✓ Onset is under 5 minutes
- ✓ Short recovery period
- ✓ Rescue inhalers are not helpful
- ✓ Does not awaken in the night with symptoms

Sandage & Zelazny, 2004

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### New advances in diagnosis

**Airflow Perturbation Device**

- Portable
- Handheld
- Determines respiratory resistance over time
- Gives reports separated out for inspiration, expiration and averages for both phases

Gallena et al., 2015

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### Recommendations

- Therapy is recommended
- Possible referral to a pulmonologist?
- Referral to a psychologist?
- Quick Sniff technique

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### Common Components of Intervention

|                              |                                     |                             |
|------------------------------|-------------------------------------|-----------------------------|
| Active Exhalation            | Relaxation of oropharyngeal muscles | Patient Education           |
| Diaphragmatic Breathing      | "Wide Open" Throat Breathing        | Visual Feedback             |
| Psychoeducational Counseling | Vocal Hygiene                       | Inspiratory Muscle Training |

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### Active Exhalation

- Focus attention away from the larynx
- Concentrate on the active exhalation rather than on inhalation
- Practice first during normal periods of breathing

Nacci et al., 2011

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### Relaxation of oropharyngeal muscles

|                |   |
|----------------|---|
| Use of imagery | Progressive relaxation techniques   |
| Stretching     | Focusing tension away from the larynx to other areas of the body (such as the diaphragm and core muscles) |

Christopher et al., 1983

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### Patient Education

Campinha et al., 2012

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### Diaphragmatic Breathing

Sharma & Singh, 2007

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### “Wide Open” Throat Breathing

|   |   |
|---|---|
| Concentrating on having the lips closed           | · Maintaining a relaxed position                    |
| Tongue is flat resting on the floor of the mouth. | · The tip should push against the lower front teeth |
| Release the jaw forward and breath                | · Using diaphragmatic techniques                    |

Pinho et al., 1997

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### Negative Practice

- ▶ Inhale noisily
- ▶ Close the vocal folds to make this happen
- ▶ Increase the tension in the vocal tract
- ▶ Bring the chin forward and up
- ▶ Should be done only to contrast the relaxed throat breathing.

Pinho et al., 1997

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### Coordinated thoracic–abdominal breathing

|   |
|---|
| The patient breaths normally while counting to 20.  |
| The SLP places 1 hand on the patient’s abdomen and upper thorax to help assess breath movements |
| Builds awareness of the patient for the non coordinated breathing.                              |
| Retrain to coordinate using diaphragmatic techniques  |

Sullivan et al., 2001

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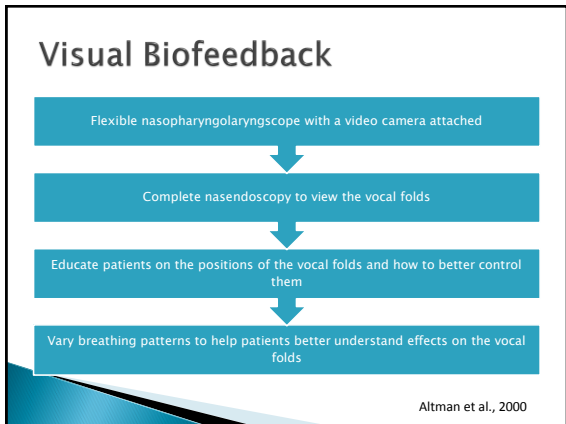
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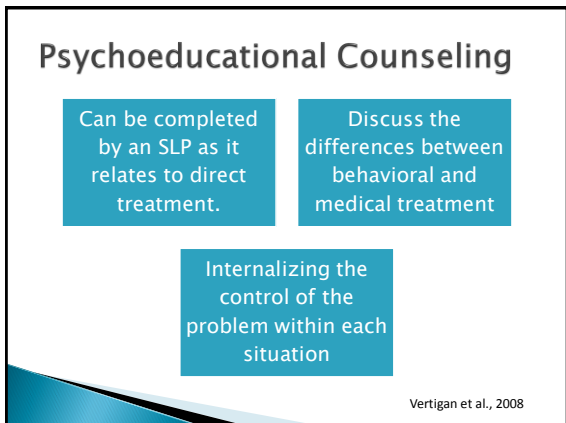
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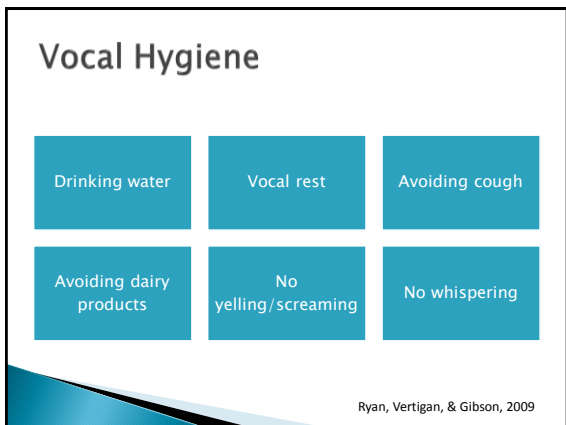
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## Inspiratory Muscle Training

- ▶ Device that had a mouthpiece and a valve that opens when a sensor detects negative pressure at a particular level
- ▶ No breathing through the nose
- ▶ First breathe normally for a few breaths and then have a prolonged exhalation. This is followed by an inhalation that is against resistance
- ▶ Complete 12 training breaths in each session

Mathers-Schmidt & Brilla, 2005

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## Home Programming

Breathing exercises should be performed 3-4 times a day to increase motor learning (Hatzelis & Murray, 2012)

Breathing exercises to be performed 2x/day for 10 to 15 minutes (Murry et al., 2010)

Complete exercises 1x/day while at home - inconclusive influence on results (Nacci et al., 2011)

Hatzelis & Murray, 2012, Murry et al., 2010, Nacci et al., 2011

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## Low-frequency v. High-frequency Intervention

Low frequency Therapy

1 cycle of treatment every 12 months (3 total cycles)



High frequency therapy

1 cycle of treatment every 3 months (9 total treatment cycles)



Findings

Both therapies were effective, however the high frequency therapy patients had fewer episodes per month

Nacci et al., 2011

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### Treatment Models

- In clinic sessions**
  - ? Length of session
  - ?Frequency
  - ?Number of total sessions
- Telepractice sessions (Towey 2012)**
  - Challenges in lack of provider
  - Transportation limitations
  - In the study 7/7 patients had symptoms that resolved

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### Practice of Techniques

- Quick Sniff – Quick Recovery Technique**
  - Breath quickly in through the nose
  - Exhale using a /f/, /s/ or pursed lips
  - Complete for multiple cycles
- Diaphragmatic breathing**
  - Start with hand on stomach
  - Breathe in slowly, expanding the stomach
  - Slowly exhale pushing the stomach back in
  - Make sure there is no movement in the shoulders

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### Notes on Practicality of Using Techniques

- Can not breath in through the nose and out through the mouth 100% of the time
- Use of rescue breaths
- Increasing the awareness for the onset of symptoms

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### Challenging situations

Swimming?

Only happens in very specific situations, difficult to replicate

Environmental triggers

Coughing instead of stridor?

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### Questions?

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