



What You Need to Know about Vocal Pathology

*for Performers, Voice Teachers, and
Music Educators*

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Vocal Hygiene



Great resource [here](#).



You are a “Vocal Athlete” (LeBorgne & Rosenberg, 2014)



Performers

- ← Demanding more of your vocal mechanism
- ← How do athletes take care of themselves?
 - ↓ Strengthening/conditioning
 - ↓ Trainers, physical therapists, coaches



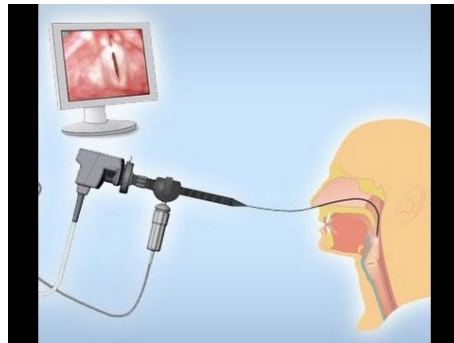
Music Educators

- ← May wear many different “vocal hats”
- ← Extensive speaking combined with singing/modeling for many different voice parts and age groups



Voice Evaluation/Therapy

- ↓ Obtain a full assessment of vocal functioning including imaging, acoustic/aerodynamic measures, case history interview, and consultation with physician to determine cause of voice problem
- ↓ Targeted exercise techniques can strengthen the intrinsic musculature of the larynx as well as coordinate respiration, phonation, and resonance
- ↓ Vocal hygiene counseling regarding voice use, dietary and lifestyle factors



What to Expect at the Voice Clinic

↳ Clinical voice evaluation

- ↳ Will involve interview regarding medical history and details about the demands on your voice (“vocal load”) as a professional voice user
- ↳ Videostroboscopic examination of the larynx (rigid or flexible scope)
 - ↓ The vocal folds in action
- ↳ Acoustic and aerodynamic measures



When should
you go to the
voice clinic?



When should you go to the voice clinic?

- ↓ Pain with voice use
- ↓ Extended warm-up time
- ↓ “Breaks” or aphonic areas of your voice
- ↓ Sudden change in pitch range or vocal quality, **especially** during a period of heavy voice use
- ↓ When you are making limited progress and your teacher cannot attribute this to technical faults
- ↓ When “something doesn’t feel right” – you know your body!
- ↓ As a screening/baseline when you are healthy

Vocal Hygiene: Hydration

↓ Internal hydration

- ← Recommended amount AT LEAST 64 oz of H₂O/day
 - ↓ Add foods high in water to your diet (melon, cucumber, grapes, etc)
- ← Avoid excessive caffeine/alcohol

↓ External hydration

- ← Dry environments (heat, air conditioning)
- ← Steam inhalation/humidifier



Medications and the Voice

↓ Many medications can have drying effect on mucous membranes

↪ OTC cold and allergy medications

Medications that affect voice

↓ Mucolytic medications (Mucinex, Robitussin, Humibid)

↓ Cough drops/lozenges

↪ Avoid menthol and eucalyptus



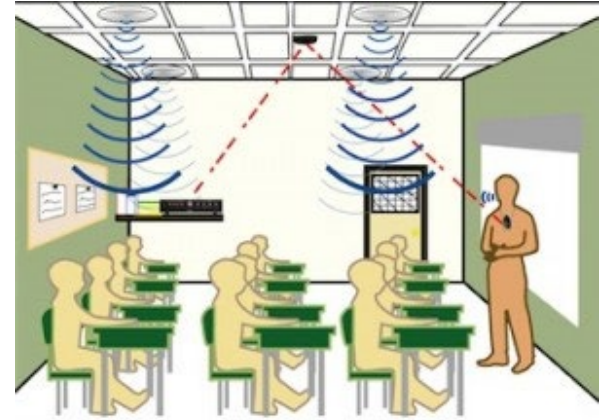
Vocal Misuse and Vocal Overuse

- ↳ Voice misuse
 - ↳ Yelling, screaming
 - ↳ Throat clearing/coughing
 - ↳ Talking over excess background noise
 - ↳ Whispering
 - ↳ Intense voice use/singing without warming up

- ↳ Voice overuse
 - ↳ Amount of total voice use throughout the day
 - ↳ Clapping hands analogy
 - ↳ Vocal fatigue



Special Considerations for Teachers and Performers

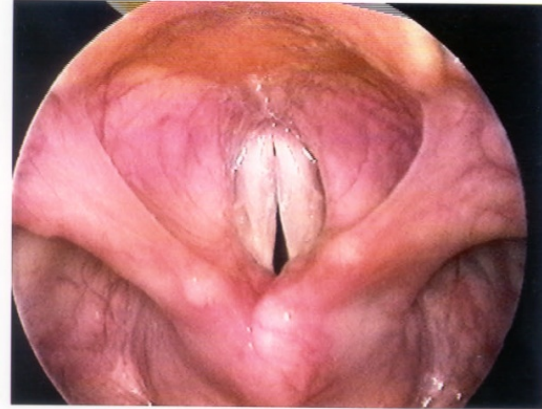
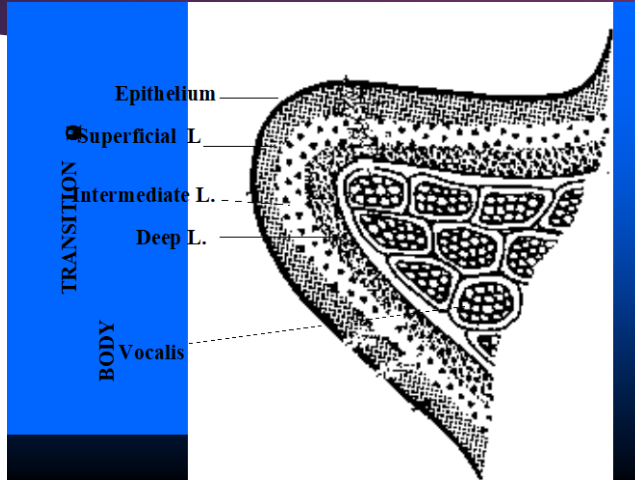


What is a Voice Disorder?

Voice Disorder: A voice disorder is characterized by the abnormal production and/or absences of vocal quality, pitch, loudness, resonance, and/or duration, which is inappropriate for an individual's age and/or sex (ASHA, 2016).

- ↓ Voice disorders have several different etiologies
- ↓ A myriad of treatments exist to target the exact cause of the disorder

Vocal Pathology



STRUCTURAL CHANGES

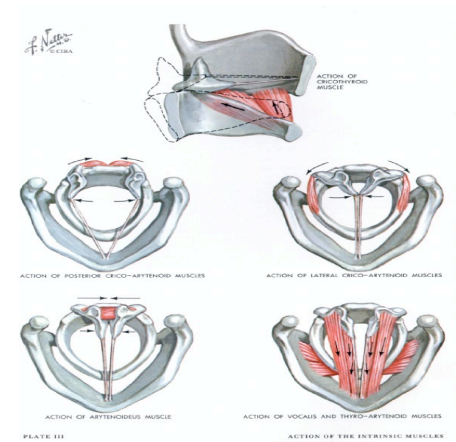
- ◆ Nodules
- ◆ Polyps
- ◆ Vascular Lesions
- ◆ Reinke's Edema/Polypoid Degeneration
- ◆ Laryngitis: acute & chronic
- ◆ Granuloma/contact ulcer
- ◆ Cysts
- ◆ Papilloma
- ◆ Sulcus vocalis
- ◆ Presbylaryngeus

SYSTEMIC DISEASE INFLUENCES ON LARYNX & VOICE

- ◆ Pharmaceutical effects
- ◆ Endocrine Influences
 - ◆ Growth hormone, thyroid function, sex hormone imbalance
- ◆ Immunologic diseases
 - ◆ Rheumatoid arthritis, Allergies, HIV/AIDS
- ◆ Infectious disease
 - ◆ Candida, respiratory
- ◆ GERD/LPR

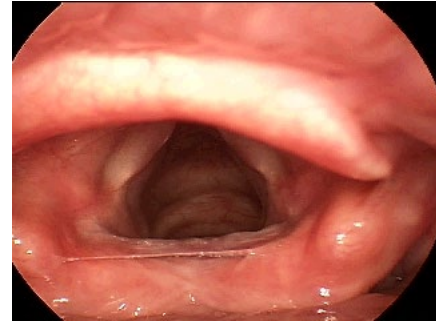
DISORDERS OF VOICE USE

- ◆ Muscle Tension Dysphonia
- ◆ Vocal fatigue
- ◆ Vocal abuse & misuse

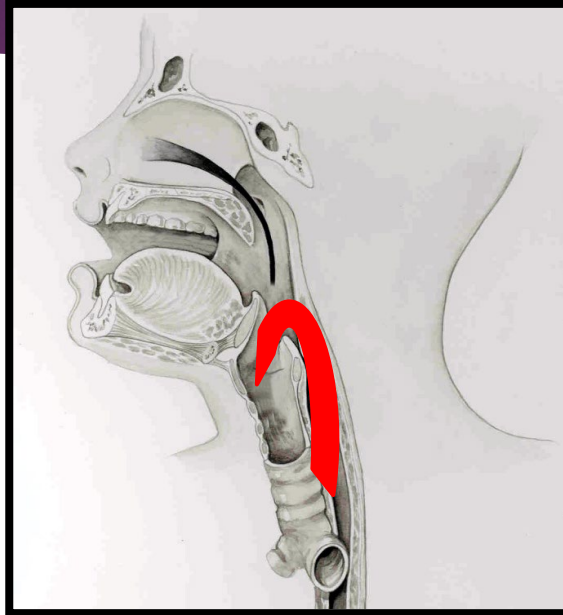


LPR & GERD

- ▶ Laryngopharyngeal Reflux (LPR)
 - ▶ “A form of gastroesophageal reflux disease in which gastric juices affect the larynx and adjacent structures. Commonly associated with hoarseness, frequent throat clearing, granulomas, and other laryngeal problems, even in the absence of heartburn” (Sataloff, 1997)
- ▶ Gastro Esophageal Reflux Disease (GERD)
 - ▶ Gastric juices flowing from the stomach back up into the esophagus. Often associated with heartburn.



Laryngopharyngeal Reflux (LPR)



Backflow of stomach contents (acids and pepsins) to the laryngopharynx

Differences

- ▶ GERD – primary defect is lower esophageal dysfunction (LES)
- ▶ LPR– upper esophageal dysfunction (UES)
- ▶ Most pts. with LPR do not have GERD, however, some pts. do have both EER and GERD

(Koufman, et.al. 2002, Otolaryngology Head and Neck Surgery, 32-35)

Prevalence of GERD and LPR

- ▶ Unknown but estimated
 - ▶ 7 - 10% of the adult U.S. population has heartburn daily
(Locke GR, 1997, Gastroenterology 112:1448-56)
 - ▶ 10% of pts. studied with laryngeal and voice disorders had LPR
(Koufman, 1988, J Voice, 78-89)
 - ▶ 57/113 pts. (50%) with laryngeal and voice disorders had pH-documented reflux
(Koufman, 2000, Otolaryngol Head Neck Surg., 448-450)

Symptoms & Signs

“It should be noted that the larynx and pharynx do not have protective mechanisms to protect against mucosal injury such as those found in the esophagus. Thus, exposure to acid and pepsin...may cause substantial symptoms and signs in the larynx and/or pharynx of some patients”

(Sataloff RT, et.al.: 2003, Reflux Laryngitis and Related Disorders, Delmar Learning, pg. 40)

Reflux Related Conditions

- ▶ Contact ulcers
- ▶ Contact granulomas
- ▶ Delay in wound healing
- ▶ Muscle tension dysphonia
- ▶ Reinke's edema
- ▶ Vocal fold erythema
- ▶ Tissue change in the laryngeal mucosa
- ▶ Subglottic and tracheal stenosis

Reflux Symptom Index (RSI)

Within the last MONTH, how did the following problems affect you? 0 = no problem
5 = severe problem

- ▶ Hoarseness or a problem with your voice
 - ▶ Clearing your throat
 - ▶ Excess throat mucous or postnasal drip
 - ▶ Difficulty swallowing food, liquids, or pills
 - ▶ Coughing after you ate or after lying down
 - ▶ Breathing difficulties or choking episodes
 - ▶ Troublesome or annoying cough
 - ▶ Sensations of something sticking in your throat or a lump in your throat
 - ▶ Heartburn, chest pain, indigestion, or stomach acid coming up
- ▶ (Belafsky, PC et al., 2001, Laryngoscope 111:979-981)

Reflux: Voice & Swallowing Symptoms



▶ Voice – LPR

- ▶ Dysphonia
- ▶ Vocal fatigue
- ▶ Voice breaks
- ▶ Pain with voicing
- ▶ Chronic cough
- ▶ Throat clearing
- ▶ Postnasal drip
- ▶ Recurrent sore throat
- ▶ Halitosis
- ▶ Altered resonance
- ▶ Prolonged voice warm-up
 - ▶ (>20-30mins)
- ▶ Excessive throat mucus
- ▶ Reactive airway symptoms
 - ▶ PVCD
 - ▶ asthma like symptoms

▶ Swallowing – LPR

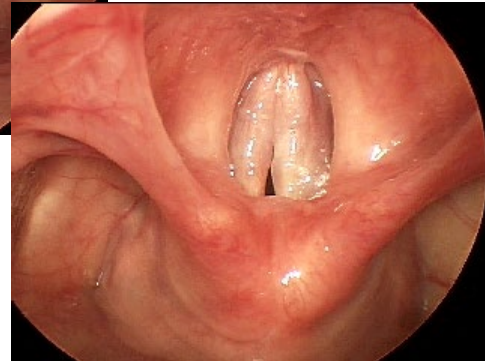
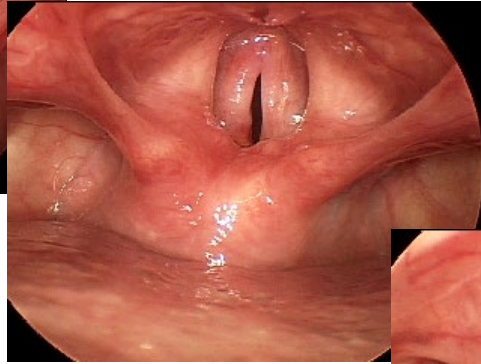
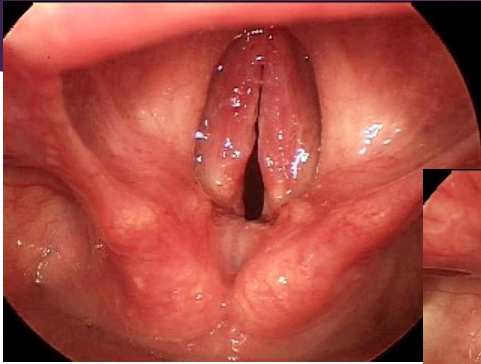
- ▶ Globus/lump sensation
- ▶ c/o food sticking
- ▶ Coughing/choking during eating
- ▶ Throat tickle
- ▶ Chronic sore throat

- ▶ GERD
 - Heartburn
 - esophagitis
 - Regurgitation
 - Odynophagia
 - Dysphagia (base of throat;
mid-chest)

Recommendations

- ▶ Lifestyle
- ▶ Dietary
- ▶ Medication
- ▶ Surgical
- ▶ Referrals

TVF edema, redness





ACUTE & CHRONIC LARYNGITIS

- ▶ Inflammation of the vocal fold mucosa
- ▶ Causes mild to severe dysphonia, decreased pitch, & phonation breaks
- ▶ Usually the result of an upper respiratory infection or bacterial infection
- ▶ Recommendations: external (steam) and internal (water) hydration, antibiotics (as prescribed), and **VOCAL REST!**



NODULES (disorder due to misuse)

- ▶ Inflammatory degeneration of the superficial layer of the lamina propria with fibrosis and edema (acute & chronic).
- ▶ Occur bilaterally and in the same place on everyone.
 - ▶ Juncture of the anterior 1/3; posterior 2/3 TVF edge.
- ▶ Caused only from vocal abuse or misuse over a period of time.
- ▶ Some question if LPR is an added irritant.
- ▶ Symptoms:



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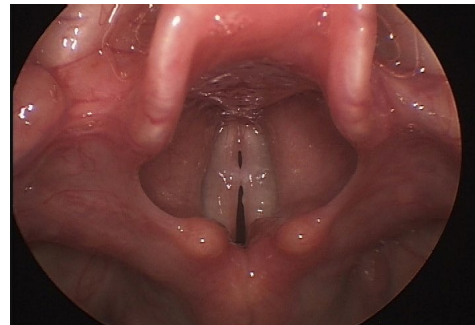
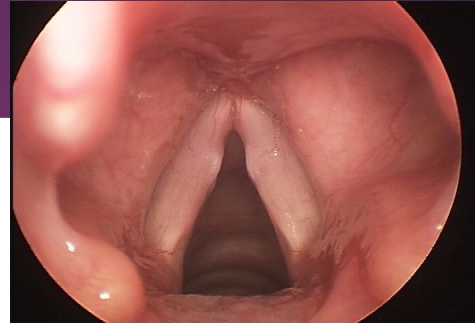
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Recommendations

- ▶ Behavioral Changes
- ▶ Vocal Hygiene
- ▶ Voice Therapy
- ▶ Surgery????





POLYPS (Disorder due to habits and use)

- ◉ Fluid filled lesion, most have active blood supply
- ◉ Most often occur on one side, but can occur bilaterally
- ◉ Thought to be a result of acute vocal trauma.
- ◉ Long-term cigarette smoking often part of the patient's history.
- ◉ Symptoms: Hoarseness
- ◉ Recommendations: 1) Short term therapy (6-8 weeks) 2) usually require surgery with subsequent rehabilitation





VASCULAR LESIONS



- ▶ Hemorrhage, hematoma & varix
- ▶ Result of some traumatic injury to the small blood vessels of the vocal folds
- ▶ Appears most commonly in pre-menstrual women using aspirin products
- ▶ Symptoms: sudden voice change, often after excessive use
- ▶ Treatment: 1) strict voice rest until resolution
2) sometimes steroids 3) in unresolved varices careful laser vaporization 4) VOICE THERAPY





CYST

- ▶ Fluid filled, sessile growths
- ▶ No clear etiologic factors
- ▶ Can occur anywhere along the vocal fold edge, ventricle, or ventricular folds
- ▶ Usually embedded as a result of a clogged mucosal gland duct
- ▶ Symptoms: Raspy hoarseness; some breathiness; tends not to vary in quality
- ▶ Recommendation: Typically a surgical excision is required with subsequent rest, rehabilitation, & therapy

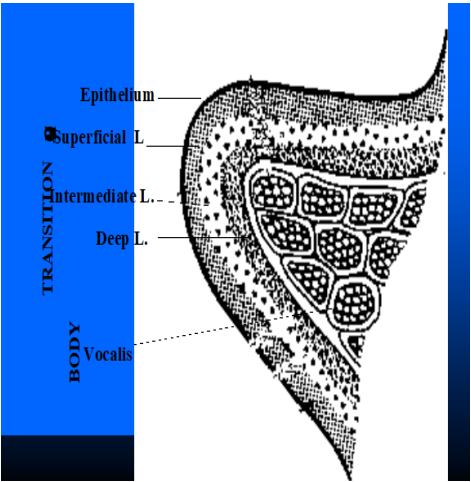
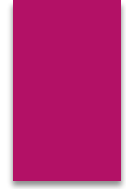




REINKE'S EDEMA



- ▶ Result of long-standing trauma resulting in Reinke's space becoming fluid filled
- ▶ Usually a low-pitched (smoker's) voice quality; progressive change
- ▶ Often the direct result of smoking over a period of time.
- ▶ Recommendations: Voice therapy, surgery and more voice therapy





GRANULOMA & CONTACT ULCERS

- ▶ Result of tissue irritation in the posterior larynx
- ▶ Reasons: 1) LPR 2) post-intubation 3) pressed, low pitched voice quality
- ▶ Often causes specific pain & constant throat clearing
- ▶ May or may not cause hoarseness
- ▶ Treatment: reflux management, therapy that focuses on decreasing medial compression





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