

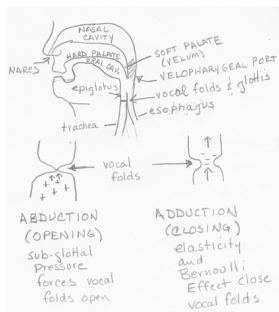
Voice and Voice Disorders

- Basic Anatomy and Physiology
- Loudness disorders
- Pitch disorders
- Quality disorders
- Diagnosis and evaluation
- Treatment

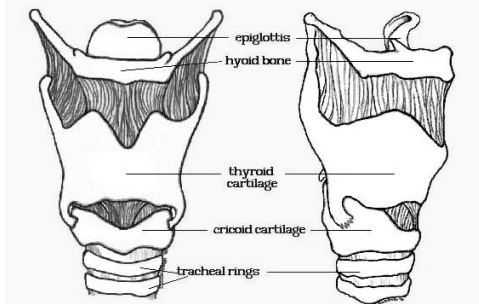
Voice & Voice Disorders

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Basic Anatomy and Physiology

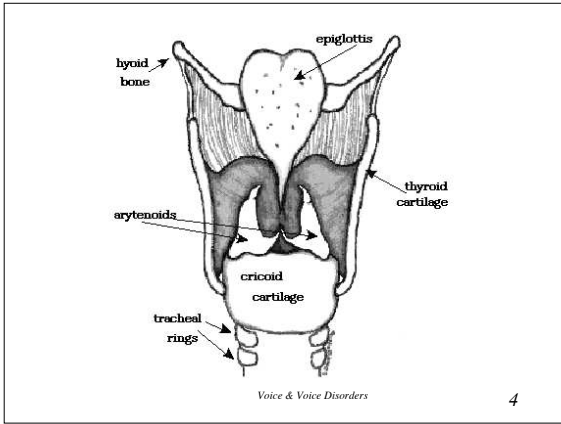


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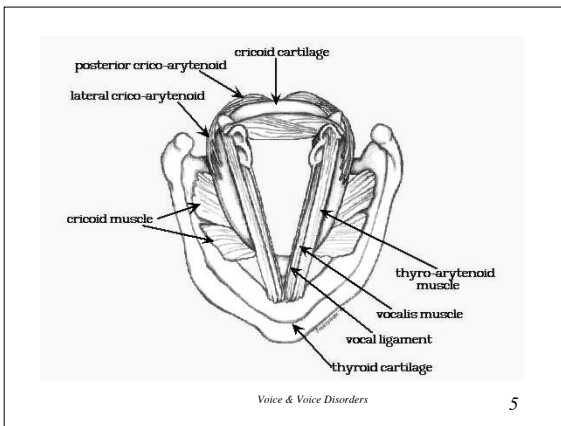


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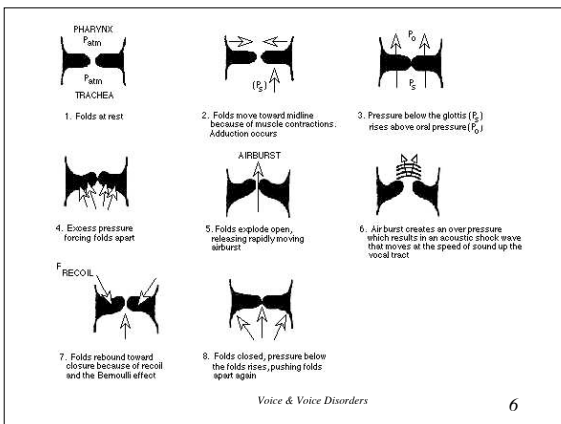
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Physiology

- Abduction (opening)
 - Sub-glottal air pressure
- Adduction (closing)
 - Vocal fold elasticity
 - Bernouli effect

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Vocal Fold Vibration

- Males about 120 Hz
- Females about 200 Hz
- Children about 240 Hz

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Intensity of Voice

- 30 dB for soft speech
- 50 dB for normal speech
- 70 dB for loud speech
- 90 dB for shouting

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Normal Voice Quality

- Difficult to quantify because it is so subjective.
- Disorders of quality use subjective terms

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Disorders of Loudness

- Aphonia
- Spastic Dysphonia
- Chronic Weak Voice
- Excessive Loudness

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Disorders of pitch

- Habitual Pitch Levels
- Variations in Pitch
- Pitch Breaks
- Falsetto
- Other Pitch Disorders

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Habitual Pitch Levels

- Variability is normal between people
- Changes in pitch during puberty
- Causes of abnormal pitch
 - “infantile” personalities
 - Tension
 - Transexuals
 - Functional (e.g., voice of authority)
 - Anabolic steroids
 - Hearing loss

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Variations in pitch

- Monotone can be due to ...
 - Emotional conflicts (e.g., depression)
 - Fatigue
 - Hearing loss
 - Habitual pitch near bottom or top of pitch range.

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Pitch breaks

- Occurs during puberty
- Rapid shift from high to low, or low to high pitch

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Falsetto

- Abnormally high pitch due to tightening of vocal folds.
- Causes include . . .
 - Psychological problems
 - Defense against pitch breaks
 - Method of preventing hoarseness of harsh voice.

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Other pitch disorders

- Tremulous voice
- Diplophonia

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Quality Disorders

- Disorders of Resonance
- Disorders of Laryngeal Tone

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Disorders of Resonance

- Hypernasality ... excessive nasality
 - Causes . . .
 - Cleft palate
 - Adenoids or tonsils removed
 - Assimilation nasality
 - Other
- Hyponasality (denasality)
 - Nasal passages are closed off.
 - Causes. . .
 - Enlarged tonsils or adenoids
 - URI

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Disorders of Laryngeal Tone

- Breathiness
- Harsh Voice
- Hoarse Voice

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Breathiness

- Excessive amount of airflow and lack of consistent vocal fold vibration
- Insert 12.9 video clip
- Causes . . .
 - Weakness of vocal folds
 - Contact ulcers, vocal nodules, vocal polyps
 - Non-organic causes

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Harsh voice

- Often found in presence of “glottal fry”
- Unusually high degree of tension.
- Causes . . .
 - Non-organic
 - Having to speak in background noise

Hoarse Voice

- Combination of breathy and harsh voice (cheerleader’s voice)
- Causes . . .
 - vocal abuse
 - Severe cold or laryngitis
 - Early sign of organic pathology

Diagnosis of Voice Disorder

- Medical
- Speech-Language Pathology

Medical

- Physical exam includes laryngoscope
- Endoscope
- Video stroboscopy

Speech-Language Pathologist

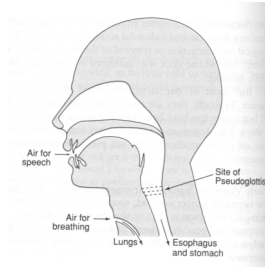
- Perceptual assessment
 - Voice disorders are observed and tested by speech language pathologist. Normally a high quality recording is made.

Treatment of Voice Disorder

- Medical
- Therapy

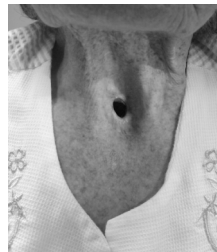
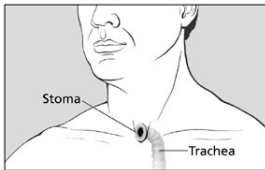
Medical

- Physical removal of polyp or nodule
- Laryngectomy
 - Removal of Vocal Folds



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Medical



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Speech therapy

- Relaxation techniques
- Adaptive behavior
- Artificial larynx (see video clip 12.10)
- esophageal speech

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