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## Transgender Voice and Communication: Vocal Health and Considerations

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### Overview

- Transgender community, terminology, and cultural awareness
- What is Feminine or Masculine Voice and Communication?
- Anatomy and Physiology of Voice Production
- Voice Science Primer
- Evaluation: Behavioral and Instrumental
- Treatment: Therapy Techniques and Counseling
- Trial Therapy – Let's practice
- What Happens When Voice Therapy is Not Enough? Surgical Considerations
- Case presentations and Q & A

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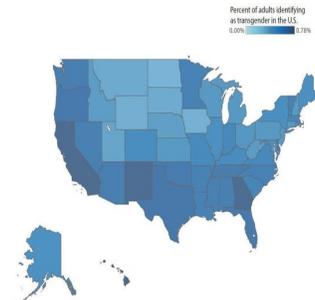
### Transgender Community

- Transgender individuals have existed throughout history and in various cultures. Within indigenous communities- they are leaders, teachers & healers.



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Percent of adults identifying as transgender in the U.S.  
0.00% 0.20%

1.4 Million adults in the US identify as transgender, based on new federal and state survey published by Williams Institute in June 2016

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### STANDARDS OF PRACTICE FOR WORKING WITH TRANSGENDER CLIENTS

www.aestheraffirm.com

I will listen to and HONOR my client's experiences

I WILL NOT ASSUME THEIR NARRATIVE IS THE SAME AS THE FEW I HAVE HEARD ABOUT TRANSGENDER PEOPLE AND THE PROCESS OF TRANSITIONING

**PRONOUNS**

I will respect and use the WORDS MY CLIENTS ASK ME TO USE FOR THEIR IDENTITIES, PRONOUNS, AND THEIR BODY PARTS.

I WILL DO MY BEST TO INTERRUPT WHERE THESE SYSTEMS HARM MY CLIENTS

I WILL LISTEN when trans people offer suggestions and insight on how to better meet their needs and serve their communities.

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### Transgender Community- Use my pronouns!



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### Gender Unicorn

by: Trans Student Educational Resources

**The Gender Unicorn** © 2016 TSER

**Gender Identity:** Female/Woman/DM, Man/Man/Boy, Other Gender(s)

**Gender Expression:** Feminine, Masculine, Other

**Sex Assigned at Birth:** Female, Male, Other/Intersex

**Physically Attracted to:** Women, Men, Other Gender(s)

**Emotionally Attracted to:** Women, Men, Other Gender(s)

To learn more, go to: [www.transstudent.org/gender](http://www.transstudent.org/gender)

Design by: Lindsay Pan and Anna Moore

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### Terminology

- **Gender Identity:** Internal sense of being- female, male, transgender, genderqueer, agender
- **Sex Assigned at birth:** Biological (male, female, intersex, or another)-based on chromosomes, hormones & anatomy
- **Gender Expression:** Physical manifestation of one's gender identity through behavior, clothing, hairstyle, voice, etc. (ie: feminine, masculine, androgynous)
- **Transgender:** A person's gender identity is different from the gender (sex) assigned at birth.
- **Cis gender:** A person's gender identity is aligned with the gender (sex) assigned at birth.

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### Terminology

- **Genderqueer:** A person who's gender identity is fluid and different from which they were assigned at birth (ie: Gender fluid, gender non-conforming)
- **Gender Dysphoria:** A DSM criteria of clinical distress when a person's assigned gender at birth conflicts with how they identify.
- **Transition:** The process which some individuals take to align their gender identity with their outward appearance.
- **Stealth/Passing:** A person's ability to be seen as cisgender man or cisgender woman.
- **Sexual Orientation:** Who one is sexually attracted to: heterosexual, lesbian, gay, bisexual, pansexual

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### Gender Diverse Voices

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### Cultural Awareness

**ASHA: Scope of Practice for SLPs working with Transgender Voice and Communication:**

- Educate and treat individuals about appropriate verbal, nonverbal and voice characteristics (feminization or masculinization) that are congruent with their targeted gender identity.
- Individuals who are transgender may elect to have voice and communication therapy to help them use their voice in a safe way. The SLP will look at a variety of aspects of communication, including vocal pitch, intonation and resonance, and nonverbal communication.
- Assessment will involve the collection of a case history and medical history, and assessment of voice and language. It is important for the SLP to eliminate any vocal abusive behaviors resulting from changes in pitch and intensity, which can lead to vocal nodules or other voice problems.

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### Cultural Awareness

[World Professional Association for Transgender Health \(WPATH\)](http://www.wpath.org)

**Standards of Care**

It is essential that voice and communication specialists be sensitive to individual communication preferences. Communication – style, voice, choice of language, etc. is personal. Individuals should not be counseled to adopt behaviors with which they are not comfortable or which do not feel authentic. Specialists can best serve their clients by taking the time to understand a person's gender concerns and goals for gender role expression (American Speech-Language-Hearing Association, 2011; Canadian Association of Speech-Language Pathologists and Audiologists; Royal College of Speech Therapists, United Kingdom; Speech Pathology Australia).

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### Community Resources

**HEALTH & WELLNESS:**

- Asian & Pacific Islander Wellness Center
- Lyon- Martin Health Services
- Tom Waddell Urban Health Center
- Dimensions Clinic
- Center of Excellence for Transgender Health- UCSF
- Kaiser Transgender Care- Oakland, SF
- SF Veteran's Affairs Medical Center
- Gaylesta – Counseling services
- CUAV- Community United Against Violence
- GLMA- Health Professionals advancing LGBT Equality

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### Community Resources

**LEGAL SUPPORT:**

- Transgender Law Center
- Lambda Legal
- SF LGBT Center
- Bay Area Legal Aide
- Human Rights Campaign (HRC)

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### Community Resources

**SOCIAL SUPPORT:**

- LYRIC- LGBTQ youth organization
- SF LGBT Center
- API Wellness Center: Trans Thrive
- Our Family Coalition
- PFLAG- Parents and allies of LGBTQ people
- National LGBTQ Task Force

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### Components of Communication

<i>Voice</i>	<i>Language</i>	<i>Speech</i>
<ul style="list-style-type: none"> <li>▪ Pitch</li> <li>▪ Resonance</li> <li>▪ Intonation</li> <li>▪ Volume/ Intensity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Syntax</li> <li>▪ Vocabulary</li> <li>▪ Pragmatics                             <ul style="list-style-type: none"> <li>• Non-verbal communication</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Articulation</li> <li>▪ Rate</li> </ul>

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### Characteristics - Language

Feminine	←————→	Masculine
<ul style="list-style-type: none"> <li>▪ Use of tag clauses/questions                             <ul style="list-style-type: none"> <li>• I'd like some water. Would you?</li> <li>• Listener oriented</li> </ul> </li> <li>▪ More 'proper speech'                             <ul style="list-style-type: none"> <li>• More pronouns, fewer contractions</li> </ul> </li> <li>▪ Use of detailed adjectives                             <ul style="list-style-type: none"> <li>• Pale blue, 'tiny bit happy'</li> </ul> </li> <li>▪ Good listening behaviors                             <ul style="list-style-type: none"> <li>• Conversational turn taking</li> <li>• 'Sympathetic' noises, words, phrases</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>▪ Statements                             <ul style="list-style-type: none"> <li>• I'd like some water.</li> <li>• Speaker oriented</li> </ul> </li> <li>▪ More frequent contractions</li> <li>▪ Fewer descriptors</li> <li>▪ Use interjections</li> </ul>

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### Characteristics - Non-Verbal Communication

Feminine	←————→	Masculine
<ul style="list-style-type: none"> <li>▪ More head movement</li> <li>▪ Lean in while communicating</li> <li>▪ Movement is more contained</li> <li>▪ Less space with arm movement</li> <li>▪ Friendly facial expressions; smile more</li> <li>▪ Touch associated with warmth and expression</li> </ul>		<ul style="list-style-type: none"> <li>▪ Head static</li> <li>▪ Move backwards while listening</li> <li>▪ 'Make themselves wide'</li> <li>▪ Larger space between arms/body</li> <li>▪ Facial expression more reserved</li> <li>▪ Touch to direct, assert power, express sexual interest</li> </ul>

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### Characteristics - Voice

Feminine ←————→ Masculine

<ul style="list-style-type: none"> <li>▪ Pitch – average 220Hz (A3)</li> <li>▪ Use intonation (pitch change) to emphasize</li> <li>▪ Less extensive downward intonational shifts</li> <li>▪ A greater proportion of upward shifts</li> <li>▪ Fewer level intonation patterns</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pitch – average 125Hz (B2)</li> <li>▪ Use stress (intensity) to emphasize</li> <li>▪ More extensive downward intonational shifts</li> <li>▪ More monotone</li> </ul>
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Gender Neutral/Androgynous Pitch  
150-185Hz

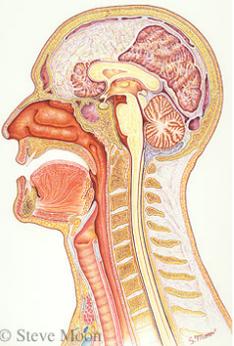
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## Anatomy and Physiology of Voice Production and a Voice Science Primer

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### Laryngeal Function

- Respiration
  - Airway control
- Swallowing
  - Airway protection
- Voice
  - Vocal fold vibration

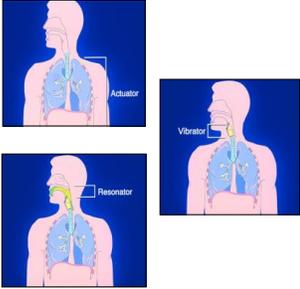


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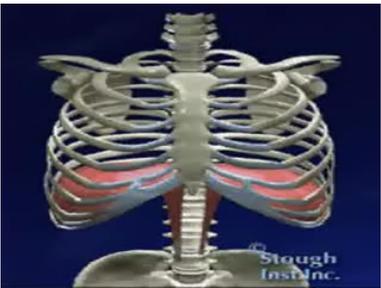
### Source – Filter Theory of Sound Production

- Power Source
- Vibratory Source
- Filter – Resonator



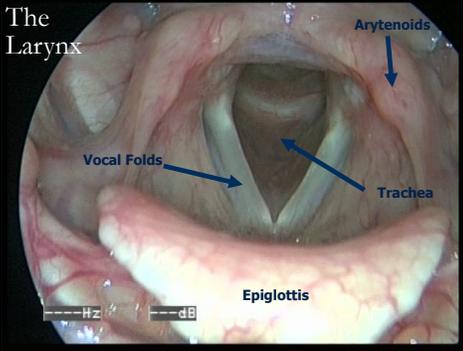
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### Power Source - Breath



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### The Larynx



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### Sound Source – Vocal Fold Vibration

- Vocal fold adduction
- Vocal fold vibration
  - Myoelastic aerodynamic
  - Passive
  - Sound source
    - Buzzing

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### Pitch Change

Thyroarytenoid (TA)

thyroarytenoid muscle  
interarytenoid muscle  
arytenoids

Cricothyroid (CT)

cricothyroid

Action: increases tension on vocal fold

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### Vocal Fold Vibration

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### Vocal Fold Vibration

#### Source Spectrum

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### Filter - Resonator

- The vocal tract filters the sound generated by the sound source – vocal fold vibration
- Vocal tract can alter resonance based on
  - Length
  - Shape
  - Proximal or Distal opening

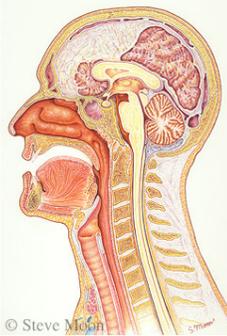
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### Effect of Resonator

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### Articulatory Gestures

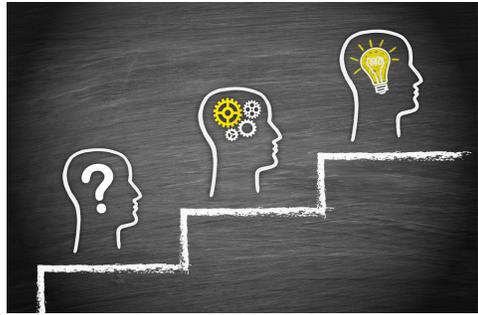
- Articulation happens by moving the
  - Tongue
  - Jaw
  - Lips
- Which in turn changes the shape of the resonator
  - Length
  - Shape
  - Distal opening



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### Why does all of this matter???



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### Evidence shows its not all about the pitch!

- Pitch
- Resonance
- Intonation
- Intensity
- Rate of speech
- Articulation
- Language
- Non-verbal communication

Coleman et al 2012, Carew et al 2007, Gelfer and Schofield 2000

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### Evidence: Male to Female (MtF)

*Pitch*

- A strong marker for the perception of female voice is an average speaking pitch of 180 Hz; range ~140 to 300Hz Gorham-Rowan and Morris 2006, King et al 2012

*Resonance*

- Resonance alone or in combination with pitch contribute to female perception King et al 2012, Carew et al 2007, Hancock et al 2013
- Oral resonance can lead to spontaneous increase in pitch Carew et al 2007

*Intonation*

- Trans women appropriately identified had more upward intonation patterns and larger semi-tone range per utterance
- Trans women misidentified had fewer upward and more downward intonation patterns Hancock et al 2014

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### Evidence: Female to Male (FtM)

*Pitch*

- With hormone therapy, it takes about one year or more for pitch to fully lower. By phone, 75% of trans men are identified as male. Dahl et al 2006
- Perceived masculinity of voice is related pitch and proximity of the habitual speaking pitch to the lowest pitch. Davies et al 2015

*Resonance*

- A change is observed in formant frequencies during the first year of hormones and with behavioral therapy Davies et al 2005

*Intonation*

- Decreased pitch variation is suggested Thornton 2008

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### Evaluation: Behavioral and Instrumental

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### Multidisciplinary Care

- Primary Care
- Psychiatry/Psychology
  - Social Work
- Otolaryngology
- Speech Pathology
- Plastic and Reconstructive Surgery
- Gynecologic Surgery
- Urogynecology, Pelvic and Reconstructive Surgery
- Pediatric Endocrinology

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### Common Procedures/Surgeries

- Hair removal
- Hair transplant
- Facial Feminization Surgery (FFS)
- Chondrolaryngoplasty (tracheal shave)
- Voice fold surgery
- Breast augmentation
- Orchiectomy
- Sexual Reassignment Surgery(SRS)/Gender Affirming Surgery

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### Medications - Hormones

<p><b>Male to Female</b></p> <ul style="list-style-type: none"> <li>▪ Estrogens                             <ul style="list-style-type: none"> <li>• Estradiol</li> <li>• Estradiol Valerate/Cypionate</li> </ul> </li> <li>▪ Progesterones                             <ul style="list-style-type: none"> <li>• Progesterone</li> <li>• Hydroxyprogesterone</li> </ul> </li> <li>▪ Anti-Androgens                             <ul style="list-style-type: none"> <li>• Spironalactone</li> <li>• Finasteride</li> </ul> </li> </ul>	<p><b>Female to Male</b></p> <ul style="list-style-type: none"> <li>▪ Androgens                             <ul style="list-style-type: none"> <li>• Testosterone cypionate/enanthate</li> <li>• Testosterone</li> </ul> </li> <li>▪ Anti-estrogens                             <ul style="list-style-type: none"> <li>• Danazol</li> <li>• Tamoxifen citrate</li> </ul> </li> </ul>
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### Voice and Communication Assessment

- May happen anytime
- Suggested that 3 months after beginning hormone therapy is ideal de Bruin et al 2000
- Evaluation often requested incongruence between appearance and voice is highest

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### Interdisciplinary Assessment: Voice and Communication

- Completed by a Laryngologist and voice trained Speech Pathologist
- Facilitates development of cohesive medical and behavioral treatment plan
  - History
  - Laryngeal Evaluation
  - Perceptual Evaluation
  - Laryngeal palpation and assessment of tension
  - Voice/Speech/Communication patterns
  - Awareness and stimulability for change
  - Identify the patient's goals

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### Patient Intake/History

- Identification
  - Preferred name/pronouns
- Pertinent medical and surgical history
- Medications
  - Hormones
  - Other
- Employment } Vocal demand
- Social history
- Emotional/Psychological status
  - Coping and support system
- History of voice complaints or difficulty

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## Treatment Options

- Voice Therapy
  - Typically the first line of treatment with few exceptions
- Medical Intervention
  - Hormones, Reflux, Allergy, etc
- Surgical Intervention (Voice)
  - Only addresses pitch

## Counseling: Setting Expectations

- Discussion between the patient, physician and SLP
  - Exam findings, stimulability
  - Patient goals
  - Develop a treatment plan
- Each patient presents with varying circumstances and this must be considered when making therapy goals
- Therapy goals should be patient specific to maximize vocal efficiency/health while meeting patient/clinicians goals
- Discuss priority of goals
- Counseling may need to take place to adjust expectations of therapy (i.e. pitch in relation to body, authentic communication)

## Voice Therapy – Evidence (MtF)

- 'Oral resonance therapy' targets more feminine resonance and leads to a spontaneous increase in pitch Carew et al 2007
- Vocal Function exercises do not seem to improve therapy outcomes Gelfer 2013
- Voice therapy has been shown to significantly impact listener perception of femininity. Femininity was rated higher immediately following therapy than 15 months later. Gelfer and Tice 2013
  - Maintenance program??

## Goals for Voice Therapy (MtF)

- Find an authentic voice rather than a 'higher' voice
- Maximize vocal efficiency to avoid fatigue (reduce tension)
- Modify laryngeal behaviors
  - Increase Fo to at least 155 Hz (gender ambiguous pitch range 150-185Hz – Eflat3-F#3)
  - Increase oral vs chest resonance
  - Balance airflow
  - Decrease intensity (maybe) and vocal effort
  - Alter intonation patterns
    - Increase frequency of intonational shifts
- Increase self-awareness/self-monitoring for carryover

## Voice Therapy - Evidence (FtM)

- Paucity of research in this area
- Voice therapy is supported but little evidence on what to do and how to do it. Söderpalm et al 2004, McNeill 2006
- Pitch is primarily addressed through hormone therapy
  - Vocal fold mass increases
  - Laryngeal cartilage does not grow
- Complaints often include pitch instability and while pitch is lower it is not 'low enough'
- One paper indicates that some trans men may prefer increasing masculinization rather than male identification and prefer flexibility with their voice and communication. Davies et al 2015

## Goals for Voice Therapy (FtM)

- Find an authentic voice rather than a 'lower' voice
- Maximize vocal efficiency to avoid fatigue (reduce tension)
- Modify laryngeal behaviors
  - Decrease Fo to ~150Hz or below
  - Increase chest **and** oral resonance
  - Balance airflow
  - Decrease vocal effort
  - Alter intonation patterns
    - Decrease frequency of intonational shifts
- Increase self-awareness/self-monitoring for carryover

## Addressing Pitch

- 12 semi-tone range is ideal for speaking
- Begin in a comfortable pitch range
- Explore pitch range through glides and sirens
- Increase pitch incrementally across sessions
  - Ease, quality and overall vocal efficiency should be the guide

## Therapy Techniques

- Resonant voice therapy
- Stretch and Flow Voice Therapy
- Semi-occluded Vocal Tract (SOVT)
- Conversational Therapy Training



## Resonant Voice Therapy

- A voicing pattern involving oral vibratory sensations, particularly on the alveolar ridge and adjacent facial plates, during "easy" phonation (Verdolini et al 2008)
- Vocal fold configuration is barely abducted/adducted (Verdolini et al 2008)
- **The role of resonant voice production is to:**
  - Target oral/nasal resonance
  - Maximize vocal economy – maximize voice output and minimize intraglottal impact stress (Verdolini et al 2008)
  - Rebalance the 3 subsystems of voice production
- **Indications:** posterior tone focus, strain

## Stretch and Flow Voice Therapy

- Originally described by Stone and Casteel
- Technique to establish airflow in isolation, coordinate with phonation and focus on oral-pharyngeal resonance while maintaining minimal muscular effort (Watts et al 2015)
- **The role of Stretch and Flow Voice Therapy is to:**
  - Achieve improved airflow during phonation
  - Balance oral resonance
  - Reduce strain
- **Indications:** reduced airflow, increased strain

## Semi-occluded Vocal Tract (SOVT)

- Create semi-occlusion in the vocal tract (generally at the lips) to increase source-filter interaction.
- The vocal folds are thought move from convergent to more squared edge that reduces phonation threshold pressure.
- The patient will sense back pressure and 'buzz'.
- The result is an increase vocal efficiency and economy. (Titze 2006)
- **The role of SOVT is to:**
  - Achieve balanced airflow/resonance
  - Use back pressure to reduce impact of vocal fold vibration
- **Indications:** reduced airflow, posterior focus, increased strain

## Conversational Training Therapy (CTT)

- 'Focuses exclusively on voice awareness and efficient voice production in patient-driven conversational narrative, without the use of a traditional therapeutic hierarchy'
- 6 Interchangeable tenets:
  - (1) clear speech; (2) auditory and kinesthetic awareness of voice production; (3) rapport building; (4) negative practice; (5) embedding basic training gestures into speech; and (6) varying prosody. (Gartner-Schmidt et al 2016)
- **The role of SOVT is to:**
  - Achieve vocal efficiency; balance 3 subsystems
  - Implement in conversational speech immediately
- **Indications:** reduced airflow, posterior focus, increased strain

## Live Demo!! Voice Therapy Techniques

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### Practicing Intonation

- Raise pitch on the word in bold
  - **Where** are you?
  - Where **are** you?
  - Where are **you**?
- Walk-Jump-Step-Fall (Edwards and Stratman 1996)
  - Can be systematically applied to be perceptually more feminine

**Walk** – use average speaking pitch  
**Jump** – pitch is increased on emphasized syllable  
**Step** – step down but remain above average speaking pitch (easily skipped)  
**Fall** – pitch must fall below the pitch of the initial walk

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### Examples

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### Apps and Software

<p><b>APPLE</b></p> <ul style="list-style-type: none"> <li>▪ Sing Sharp (free)</li> <li>▪ Voice Analyst (\$9.99)</li> <li>▪ Sonnetta Voice Monitor (\$35.99)</li> <li>▪ Eva pitch MTF, FTM (\$4.99 per item)</li> <li>▪ Piano Infinity or tuner</li> </ul>		<p><b>ANDROID</b></p> <ul style="list-style-type: none"> <li>▪ Voice Pitch Analyzer (free)</li> <li>▪ Voice Analyst (\$4.99)</li> <li>▪ Datuner or digital tuner</li> </ul> <p><b>SOFTWARE</b></p> <ul style="list-style-type: none"> <li>▪ Praat (free)</li> <li>▪ Estill Voiceprint (\$50-70)</li> <li>▪ Visipitch (\$\$\$)</li> </ul>	
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## Voice App Demo

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### Duration of Therapy (individual)

- Patient specific and guided by progress and ability to meet therapy goals
- 4 sessions of voice therapy, 1x every other week
  - Understands and is consistent with replication of the mechanics of altering voice production
    - Airflow, resonance, tension management
    - Navigating pitch range
    - Varying intonation
- 1x per month for 4-6 months
- 1x every other month or discharge

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### Example Therapy Course

<p><b>Session 1</b></p> <ul style="list-style-type: none"> <li>▪ Introduce characteristics of voice and communication                     <ul style="list-style-type: none"> <li>• Focus on voice and speech</li> <li>• Discuss goals</li> </ul> </li> <li>▪ Introduce anatomy and physiology of voice production</li> <li>▪ Vocal hygiene (as needed)</li> <li>▪ Introduce vocal exercises                     <ul style="list-style-type: none"> <li>• Target balanced voice production with pitch in mind</li> </ul> </li> <li>▪ Relate exercises to 'real life'</li> </ul>	<p><b>Session 2-4</b></p> <ul style="list-style-type: none"> <li>▪ Check-in re: practice</li> <li>▪ Discuss overall awareness of voice in practice and in daily life</li> <li>▪ Counsel regarding application</li> <li>▪ Address fatigue/problem solve</li> <li>▪ Review exercises                     <ul style="list-style-type: none"> <li>• Move up in hierarchy</li> <li>• Build independence with self awareness and monitoring</li> </ul> </li> <li>• Warm-up/Cool-down</li> </ul>
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### Session 5-8

- Check-in re: success with application of techniques in daily life
  - Practice? Warm-up? Cool-down?
- Discuss overall awareness of voice in practice and in daily life
  - Help connect the dots if successful in exercises
- Counsel regarding application
  - Troubleshoot problem areas
- Review exercises
  - Move up in hierarchy – likely conversation
  - Build independence with self awareness and monitoring

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### Group Sessions

- Not a replacement for 1:1 sessions
- Approximately 3-6 clients
- Typically ranges from 6-8 weeks
- Usually 60-90 minutes
- Provides accountability and camaraderie
- Increases opportunities to practice and generalize skills



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### Group Therapy Structures by: Michelle Mordaunt

<p><b>Prior to 1:1 session</b></p> <ul style="list-style-type: none"> <li>▪ Week 1: Client Education</li> <li>▪ Week 2: Resonance</li> <li>▪ Week 3: Pitch &amp; pitch range</li> <li>▪ Week 4-5: Intonation &amp; Lexical Features</li> <li>▪ Week 6: Nonverbal Communication &amp; Language</li> <li>▪ Week 7: Implementation &amp; Video Recording</li> <li>▪ Week 8: Self assessment &amp; Wrap up</li> </ul>	<p><b>After 1:1 session</b></p> <ul style="list-style-type: none"> <li>▪ Week 1: Introduction</li> <li>▪ Week 1-2: Generalization</li> <li>▪ Week 2-3: Self- Assessment &amp; Journaling</li> <li>▪ Week 4: Challenges &amp; Support</li> </ul>
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### What if Voice Therapy is Not Enough? Surgical Considerations

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### Surgical Intervention

- Only after behavioral intervention (timeline???)
  - Assess patient's compliance with behavioral recommendations
  - Patient's who are not able to comply with linguistic and speech changes may be poor surgical candidates
- Surgical intervention is a team decisions
  - Patient
  - Surgeon
  - Speech Language Pathologist

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### Surgical Options

Alter pitch (*It's NOT all about pitch!*)

- Lower pitch
  - Type 3 Thyroplasty
- Elevate pitch
  - Type 4 Thyroplasty
  - Wendler Glottoplasty

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### Surgery to Lower Vocal Pitch

Type III Thyroplasty – Considered only if hormone therapy is insufficient

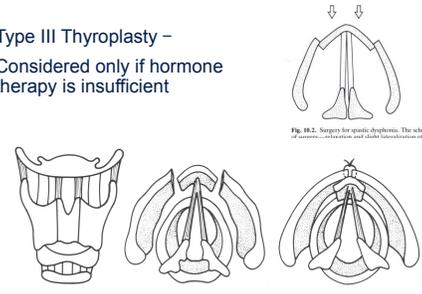


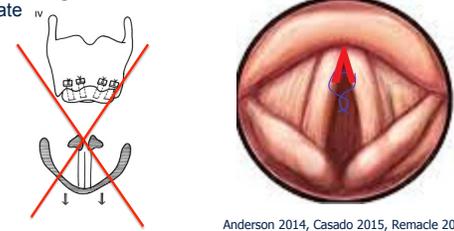
Fig. 10.2. Surgery for spastic dysphonia. The site of cartilage excision and stable lateralization of

Nakamura K et al 2013, Hoffman et al 2014

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### Surgeries to Elevate Vocal Pitch

- Type IV Thyroplasty
  - Poor long term success rate
- Wendler Glottoplasty



Anderson 2014, Casado 2015, Remacle 2011

Isshiki et al 1983, Neuman 2004

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### Case #1

- 24 year old male to female transgender
  - Prefers female name/pronouns
- Began hormone therapy 2 months ago
- Seeing a therapist regularly
- She is transitioning
  - Wears more feminine clothing intermittently
  - Came out to her friends and family however not in her work
- Student; applying to grad school
- Moderate to high vocal demand
- She attempted a higher pitch; feels affected and unable to maintain
- **Primary complaint:** incongruence, low pitch, fatigue with use

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- Past Medical History:
  - Anxiety
  - Depression
- Medications
  - Estradiol
  - Spironolactone
  - Effexor

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### Initial Evaluation



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### Therapy

- 4 sessions of voice therapy 1x every other week
- 9 sessions 1x per month
- Therapy goals:
  - Resonant Voice Therapy, CTT
    - Reduce tension/increase vocal flexibility and comfort
    - Balance airflow and resonance
    - Variable intonation with less extensive downward pitch shifts
    - Increase comfort with volume
  - Carryover, carryover, carryover
  - Self-monitoring and 'resetting' her voice

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### Post-Therapy Evaluation



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### Case #2

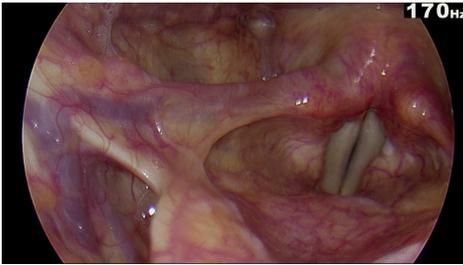
- 49 year old male to female transgender
  - Prefers female name/pronouns
- Began hormone therapy 1.5 years ago
- Fully transitioned
- Worked with a voice coach with good progress
- Tracheal shave 6 months ago
  - Post-op voice lower without access to upper pitches
- Fire captain
- High vocal demand with frequent loud voice use
- **Primary complaint:** incongruence, low pitch, no high pitches, unable to sing, misgendered when she speaks and on the phone

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- **Past Medical History:**
  - Arthritis
  - Depression
  - Hearing loss
  - Seasonal allergies
- **Past Surgical History:**
  - Tracheal Shave
  - Facial Feminization
  - Vasectomy
  - Nose surgery
  - Tonsillectomy
- **Medications**
  - Estradiol
  - Spironolactone
  - Celexa

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### Initial Evaluation



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### Surgery/Post-operative Voice Therapy

- Wandler's Glottoplasty
- Post-operative voice therapy
  - 6 visits over 10 months
  - Goals:
    - Promote vocal fold healing by maximizing efficiency
    - Resonant Voice Therapy/SOVT with cup bubbles
      - Balance airflow and oral resonance with reduced strain
    - Counsel, Counsel, Counsel

**No Pain, No Gain**

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