**Muscle Tension Dysphonia: Treatment**
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**What is MTD?**
- Hypercontraction of the extrinsic muscles of the larynx
- Incoordination of muscle activity controlling adduction, abduction, and voicing
- What is or are the causes?
  - Stress, depression, anxiety, secondary gain, high voice demands, physical and emotional overload

**What does it sound like?**
WHAT IS MTD?
○ What does it look like?

TREATMENT
○ First step: Identify/realize the problem
○ Second step: Facilitate target behavior/quality
○ Third step: Shape it, stabilize it, habituate it working through hierarchy of difficulty
○ RECORD, RECORD, RECORD

VOCAL HYGIENE
○ First step: Identify phonotraumatic behaviors
○ Review patient's stroboscopy: Nothing could be more functional/hit home harder than seeing their own behaviors first hand!
○ Patient education: Cause and Effect
○ What can be…
  ○ Modified?
  ○ Eliminated?
  ○ Manipulated? (Environment)
VOCAL HYGIENE

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TREATMENT: FACILITATING TECHNIQUES

- Massage/digital manipulation
- Chant talk
- Establishing a MORE optimal pitch (?normal)
- Frontal focus
- Pitch inflection (activate CT muscle): Don’t forget about the ear!
- Yawn sigh (Ahhh!)
- Straws/Mirror Fogging

TREATMENT: CIRCUMLARYNGEAL MASSAGE

- First described by Aronson (1990)
- Before initiating: PALPATE
  - Is larynx high?
  - Do suprahryoid muscles feel taut?
  - Is hyoid bone aligned properly to spinal column?
  - Is there adequate spacing of the thyroid and cricoid at rest?
  - Is there adequate excursion of CT mechanism during pitch glides?
  - Can the larynx move laterally?
  - Is there pain with manipulation?
- Repetitive Stress Injury: Muscles may shrink up, become scarred, fibrosed in cases of repetitive tense motion
TREATMENT: CIRCUMLARYNGEAL MASSAGE

In Brief:
- Encircle the client's thyrohyoid space with thumb and index finger and move the fingers in a posterior direction until the major horns of the hyoid are located. Light to moderate pressure should be exerted in a circular motion over the tips of the hyoid bone. Then this same movement is administered to the thyrohyoid space downward toward the thyroid notch, intending to open the space and essentially reduce the suprahypoid muscular tension responsible for elevating the larynx in a hypertensive state.

TREATMENT: VOCAL FUNCTION EXERCISES

Vocal Function Exercises
(Re: Joseph Stemple, Ph.D., SLP)

Exercise 1 - Warm-up Exercise: Sustain the vowel sound "ee" as long as possible on the musical note F above middle C for women, below middle C for men. The note should be produced as softly as possible, but without breathiness. A good supported deep breath should proceed the tone. The "ee" should be produced with an extreme "forward" sound, almost, but not quite, nasal. The goal is to sustain the sound without breaks for as long as possible. Sustain an "ee" as long as possible. Goal: 40 sec without breaks or of the same duration as your maximum sustained /s/.

Exercise 2 - Stretching Exercise: Glide from your lowest to your highest note on the word "knoll" or on a lip or tongue trill. Voice should be soft, and a forward focus used. If breaks occur, continue to glide without hesitating. Goal: no voice breaks.

Exercise 3 - Contracting Exercise: Glide from a comfortable high note to your lowest note on the word "knoll" or on a lip or tongue trill. Voice should be soft, and a forward focus used. If breaks occur, continue to glide without hesitating. Goal: no voice breaks.

Exercise 4 - Low-impact Adductory Power Exercise: Sustain the musical notes C - D - E - F - G, each as long as possible on the word "ol" ("old" without the "d"). Lips should be rounded; a sympathetic vibration should be felt on the lips. Goal: same as exercise 1.

Following Systematic Taper is Recommended:
- Week 1: Full program 2 times each, 2 times per day, preferably in morning and evening
- Week 2: Full program 2 times each, 1 time per day in morning
- Week 3: Full program 1 time each, 1 time per day in morning
- Week 4: Exercise 4, 2 times each, 1 time per day in morning
- Week 5: Exercise 4, 1 time each, 1 time per day in morning
- Week 6: Exercise 4, 2 times each, 3 times per week in morning
- Week 7: Exercise 4, 1 time each, 1 time per week in morning


TREATMENT: VOCAL FUNCTION EXERCISES (MODIFIED)

WARM-UP: Pay attention to the vibrations in the back of your throat.

STRETCH: Glide from the lowest to the highest pitch in your vocal range using:
1. A lip or tongue trill.
2. An aspirated sound such as "zzz" or "vvv"
This should feel easy and sound clear with no vocal strain.

CONTRACTION: Glide from the highest to the lowest pitch in your vocal range using:
1. A lip trill.
2. An aspirated sound such as "zzz" or "vvv"
This should feel easy with no vocal strain.

STRAW SOUNDS: Hold each exercise for as long as possible on one breath. Repeat each of the following steps 3x, each at a different pitch.
1. Take your straw, put one end in your mouth and the other in the cup of water. Begin voicing and blowing into the straw simultaneously, making sure to keep the bubbles in the water at an even size/height.
2. Now, keep the straw in your mouth, multiply the size/height of the bubbles in the water, and again begin voicing and blowing simultaneously, making sure to keep the bubbles in the water at an even size/height.
3. Place a tissue or small piece of paper on the table in front of you. Hold the straw approximately an inch away from your lips. Begin voicing and blowing simultaneously in order to move the tissue or paper with the airflow you achieve through the straw.
4. Now, put the straw down and attempt to achieve that same degree of balance between voice and airflow with the straw removed. Repeat with each of the steps above.

TREATMENT: THE SEMI-OCCULDED VOCAL TRACT

- Coordination of airflow and muscle control results in continuous vocal fold vibrations that produce sound.
- Achieve that balance (VOCAL ECONOMY!)
- Lower phonation threshold pressure
- Reduce tension while improving coordination
**TREATMENT: RESONANT VOICE**

- **TARGET:** Easy oral/frontal vibrations in the context of voicing.
- "How does it sound? How does it feel?": Experiential therapy
- Working for a change in hardware (neuromuscular) and software (cognitive)
- Repetition, repetition, repetition!!

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**Stretches for Voice Therapy (Verdolini):**

- **Shoulders** (elbows in back, arms in front)
- **Neck** (ROM stretches, ear to shoulder)
- **Jaw** (Massage/compress/pull masseters)
- **FOM** (Thumb massage, “ahh” no tension)
- **Lips** (Trills [voice on/off/alternate], fog horn)
- **Tongue** (Trills [voice on/off/alternate], finger press)
- **Pharynx** (Yawn, yawn sigh with easy voice)
- **Breathing** (Diaphragm, exhale on voiceless /l/)

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**TREATMENT: RESONANT VOICE**

- **Basic Training Gesture:** “Molm”
- **Stage 1: ALL VOICED**
  - Words (My) →Phrases (My Mother) →Sentences (My mother made me mad
  - Chant (Robot) → Variable intonation
- **Stage 2: VOICED-VOICELESS**
  - “Mom told Tom to marry Megan in town”
- **Stage 3: PARAGRAPH READING**
  - Rainbow, something purposefully boring/purposefully animated
- **Stage 4: CONVERSATION**

**RECORD RECORD RECORD RECORD**
TREATMENT: FLOW PHONATION

INDICATIONS:
- Do you hear what I hear? (breath holding: sighing, breath dumping, audible breathing, short bursts of speech with gasping in between)

AWARENESS: Negative Practice
- How much effort does it take? 0-10

TREATMENT: FLOW PHONATION
- FLOW
  - Just breathe
  - "Release" vs. "blow"
  - Keep it consistent (sound the same from start to finish)
  - Circle of breath: No holding patterns
  - INSTRUCT: Hold a strip of tissue between your pointer and middle fingers at the level of your nose. Feel the exhale with your lips, not your throat.
  - Easy? Consistent? Any breath holding?

AWARENESS, AWARENESS, AWARENESS!!

TREATMENT: FLOW PHONATION
- Flow + Voice
  - "Feel the same flow, add a gentle 'ooo'"
  - Hold the "release" for 2-3 seconds before "opening up" the voice if initially difficult, or toggle between the two
  - "Gentle, Easy, Slow, low effort"
TREATMENT: FLOW PHONATION
- Stretch + Flow + Voice:
  - Add a pitch glide
  - Begin with flow (release) → voice on a glide → end with
    flow (release)
  - Think "sigh"
  - Not meant to showcase range!!

TREATMENT: FLOW PHONATION
- Stretch + Flow + Voice + Articulation and Resonance
  - "Whoooo": Where do you feel that? Let’s expand it
  - "Who are you?": Where is the buzz?
    - If they can’t feel it, actually insert a /z/
    - "Who’s at the zoo?"
  - "Whoooooo" → "Whooooooommmmm" → "Whooooommememememe" → "Whoommmmmy
    mama makes lemon jam": Where is the vibration?

TREATMENT: FLOW PHONATION
- CAUTION: AVOID STAIR STEP DOWN
- Start in Chant → Variable Intonation
- Still need some help? Have the patient ask questions!
TREATMENT: HIERARCHY
- Every patient is different
- Variability of practice (research on motor learning)
- Don’t play “hard to get” with conversation

TREATMENT: PATIENT PERCEPTIONS
- “There are no hidden cameras in here, I promise”
- Let’s talk numbers!
  - Studies have suggested ~40% of referred patients do not attend an initial voice therapy session and ~50% do not return after their initial visit

- Questionnaire: Patient Perceptions of Voice Therapy (PPVT)
- 45 patients (Mixed: MTD and benign lesion)
- Combination of RVT, Flow, Circumlaryngeal reposturing
- Tx end point determined on individual basis
  - 100%: “It helped!”
  - 95.6%: Can do what they want and need with their voice after tx
  - 66%: “Voice therapy definitely caused changes”
  - 64%: Transfer of VT techniques to conversational speech most difficult
  - 97%: Practiced (42% everyday, 40% every couple days)
TREATMENT: ALTERNATIVE

- PT
- Counseling/Psych Tx
- Accupuncture
- "New-agey-yoga-stuff" (Dan Sherwood, 2014)