

## VOICE THERAPY 101: IDEAS FOR TREATMENT OF FUNCTIONAL VOICE DISORDERS

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## FUNCTIONAL VOICE DISORDERS

- STRUCTURES APPEAR TYPICAL, BUT ARE NOT PRODUCING DESIRED RESULTS
- THREE SUBSYSTEMS THAT PRODUCE VOICE
  - UNBALANCED
  - POORLY COORDINATED
  - INFLEXIBLE

## THREE SUBSYSTEMS OF VOICE

- RESPIRATION
  - POWER SOURCE FOR VOICE
- PHONATION
  - LARYNX SHOULD DO NO MORE, NO LESS THAN NECESSARY
- RESONANCE
  - SPACE ABOVE THE LARYNX (VOCAL TRACT) FILTERS THE VOCAL SIGNAL
    - PHARYNX, MOUTH, NOSE

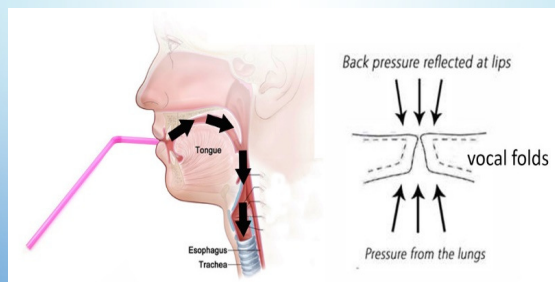


## CURRENT UNDERSTANDING OF VOICE PHYSIOLOGY FOR APPLICATION TO VOICE THERAPY


- SEMI-OCCLUDED VOCAL TRACT CONFIGURATION
  - INCREASED IMPEDANCE AT FRONT PART OF ORAL CAVITY
  - TASKS INCLUDE PHONATING WITH NEARLY OCCLUDED LIPS, PRODUCING VOICED FRICATIVES AND NASALS, LIP TRILLS, TONGUE TRILLS, Y-BUZZ, STRAW PHONATION (EITHER OPEN @ DISTAL END OR SUBMERGED IN WATER)
  - GOAL TO ACHIEVE A CLEAR, BRIGHT, RESONANT VOICE
  - APPLIED TO HYPERFUNCTIONAL AND HYPOFUNCTIONAL DYSPHONIAS, UNILATERAL VF PARESIS, HYPERNASALITY
  - USED TO INCREASE BREATH MANAGEMENT IN SINGING

## WHY/HOW DOES PHONATING THROUGH A STRAW IMPROVE A VOICE??!!

- PHONATION CAN BE MADE MORE EFFICIENT THROUGH IMPEDANCE MATCHING BETWEEN VOICE SOURCE AND VOCAL TRACT
- OSCILLATION THRESHOLD PRESSURE REDUCED BY INCREASED VOCAL TRACT INERTANCE, ASSOCIATED WITH LOWER EFFORT
- GLOTTAL FLOW PULSE SHAPE AND VIBRATIONAL VOCAL FOLD CHARACTERISTICS ARE IMPACTED BY CHANGES IN ACOUSTIC PRESSURES – LOWER AMPLITUDE AND RELATIVE CLOSED TIME OF GLOTTIS
- CAN ACHIEVE HIGH SUBGLOTTAL PRESSURES NEEDED FOR SINGING WITH MINIMAL VF COLLISION/IMPACT STRESS
- THIS HAS BEEN SHOWN TO BE MORE EFFECTIVELY ACHIEVED THROUGH STRAW PHONATION THAN WITH TRADITIONAL VOWEL PHONATION



## FLOW PHONATION



- BREATH FILLED UTTERANCES, STEADY EXHALATIONS
- FOCUSES ON COORDINATION OF AIRFLOW AND PHONATION
- VARIOUS BIOFEEDBACK METHODS:
  - PLACING A PIECE OF TISSUE IN FRONT OF THE MOUTH
  - HOLDING HAND IN FRONT OF THE MOUTH TO MONITOR AIRFLOW
- VOICING IS INTRODUCED ONCE GENTLE, CONTINUOUS AIRFLOW DURING EXHALATION IS ACHIEVED
- EASY, SMOOTH VOICE QUALITY IS CARRIED INTO WORDS AND PHRASES, AND BREATHINESS IS GRADUALLY REDUCED

## RESONANT VOICE THERAPY




- KITTIE VERDOLINI ABBOTT – LESSAC MADSEN RVT
- GOAL TO ACHIEVE A STRONG, CLEAR AND EASY TO PRODUCE VOICE
- SUGGESTED PROTOCOL DESIGNED TO BUILD FORWARD RESONANCE PLACEMENT AT THE SOUND LEVEL THROUGH CONVERSATIONAL SPEECH TASKS
- CAN EASILY BE INDIVIDUALIZED FOR EACH CLIENT'S VOCAL DEMANDS
  - LOUD VOICE
  - PROJECTED VOICE IN PRESENCE OF BACKGROUND NOISE
- PERCEPTUAL DATA ANALYSIS, INCLUDING RATING OF VOCAL EFFORT FROM CLIENT PERSPECTIVE; CAN INCLUDE OBJECTIVE MEASUREMENT OF INTENSITY FOR SPECIFIC GOALS

## HOW DO I GET THEM TO GENERALIZE??

- CHALLENGE YOUR CLIENTS TO APPLY "NEW" VOICE IN FIRST THERAPY SESSION
- CREATE CARRY OVER ACTIVITIES WITH IMMEDIATE FUNCTIONAL RELEVANCE
- CONSIDER HOW CLIENT MIGHT TRACK PROGRESS
  - PHONE APP, MID-WEEK CHECK IN
- REQUIRE AND EXPECT SELF-REPORTING OF PROGRESS

## VOCAL FUNCTION EXERCISES

- JOSEPH STEMPLE
- PRESCRIPTIVE SET OF EXERCISES TO BE COMPLETED DAILY, SET PROTOCOL
- PAIRS WITH RESONANT VOICE FOR FUNCTIONAL APPLICATION IN VARIETY OF SPEECH TASKS
- TO BE PRODUCED AT A SOFT INTENSITY, FULLY ENGAGED VOICE
- SPECIFICALLY TRACKED GOALS:
  - INCREASE MAX PHONATION TIMES
  - ELIMINATE VOICE BREAKS
  - INCREASE TOTAL PHONATION/PITCH RANGE
- OTHER OUTCOMES:
  - REDUCTION OF VOCAL FATIGUE
  - IMPROVED VOCAL ENDURANCE



## LARYNGEAL MASSAGE/DIGITAL MANIPULATION



- ARNOLD ARONSON, NELSON ROY
- USED FOR LARYNGEAL AND EXTRALARYNGEAL MUSCLE TENSION
  - USUALLY OF FUNCTIONAL ETIOLOGY
  - IS USEFUL IN PRESENCE OF LARYNGEAL PATHOLOGY
- CAN BE LABOR INTENSIVE INITIALLY DEPENDING ON DEGREE OF MUSCLE TENSION
- DOES NOT TYPICALLY REQUIRE DIRECT TREATMENT TIME MORE THAN 3-4 SUBSEQUENT SESSIONS WITH REDUCED TIME DEDICATED TO IT

- **STEPS WHILE CLIENT IS SITTING AT REST:**
  - INCREASE THYRO-HYOID SPACE
  - LOWER LARYNX
  - INCREASE LATERAL LARYNGEAL MOVEMENT
- **STEPS WHILE CLIENT PHONATES:**
  - MAINTAIN THYRO-HYOID SPACE AND LOWERED LARYNGEAL POSITION – HOLD DOWN THE LARYNX
  - CUE SUSTAINED PHONATION, MOVE TO TYPICAL SPEAKING PITCH, RESPONDING TO CLIENT'S VOICE PRODUCTION SHIFTS
- ADD OTHER LARYNGEAL ADJUSTMENTS AS NEEDED
  - MEDIAL COMPRESSION
  - ANTERIOR-POSTERIOR COMPRESSION
- **FOLLOW UP "NEW" VOICE WITH SOME PITCH/ENGAGED VOICE REINFORCEMENT TASKS**
  - COUGH, THROAT CLEAR INTO SUSTAINED VOICE
  - HARD VOICE ONSETS (SHORT TERM), TO ACHIEVE GLOTTAL CLOSURE, INTO SUSTAINED FULLY ENGAGED VOICE
  - NEGATIVE PRACTICE MOVING FROM OLD VOICE TO NEW VOICE

## OPEN THROAT BREATHING STRATEGIES

- SEMI-OCCLUDED VOCAL TRACT IS CREATED, TO MOVE CLOSURE SOMEWHERE OTHER THAN AT THE LEVEL OF THE VF'S
- BREATHE SILENTLY THROUGH THE NOSE
- CHECK CENTER OF BREATH SUPPORT
  - GOAL: SOLAR PLEXUS, ABDOMINAL EXPANSION



## THOUGHTS RELATED TO CLIENT MOTIVATION...

- VOICE THERAPY APPROACHES HAVE TO BE CHOSEN TAKING INTO CONSIDERATION WHAT IS GOING TO "HOOK" THE CLIENT INTO COMMITTED PARTICIPATION.
- CLIENTS NEED TO UNDERSTAND THAT WE DON'T FIX THEIR VOICES, BUT WE TRAIN THEM TO USE TOOLS TO HELP THEM DEVELOP NEW VOCAL SKILLS TO IMPROVE VOICE QUALITY AND REDUCE VOCAL EFFORT. BE TRANSPARENT ABOUT THE PROCESS.
- YOU SHOULD KNOW FAIRLY QUICKLY IF THE CLIENT IS TAKING OWNERSHIP OF THE TREATMENT PLAN.
- COMMON FACTORS IN TREATMENT RESPONSIVENESS
  - SUCCESS OF TX DEPENDS MUCH MORE ON THE STRENGTH OF THE THERAPEUTIC RELATIONSHIP (DOES CLIENT TRUST THAT WE KNOW OUR STUFF) AND THE BELIEF THAT THEY CAN APPLY WHAT THEY LEARN THAN WHAT SPECIFIC TX STRATEGIES WE TEACH

## IPAD APPS AND OTHER RESOURCES

- IPAD APPS
  - SONNETA VOICE MONITOR
  - PITCH TUNER – TUNA PITCH
  - SOUND LEVEL METER
  - VIRTUAL RETROSLANT
  - BLUEBERRY PUBLISHING
    - LARYNX ID, VOCAL FOLDS ID, RESPIRATION ID
- [HTTP://WWW.ATEMPOVOICECENTER.COM/](http://www.atempvoicecenter.com/), KRISTIE KNICKERBOCKER, SLP
- [HTTP://WWW.WISCONSINVOICE.COM/](http://www.wisconsinvoice.com/), KATHERINE VERDOLINI ABBOTT, PHD, LESSAC-MADSEN RESONANT VOICE THERAPY
- [HTTPS://WWW.FLURALPUBLISHING.COM/](https://www.fluralpublishing.com/), JOSEPH STAMPLE, PHD, VOCAL FUNCTION EXERCISES
- [HTTPS://WWW.AMAZON.COM/UNDERSTANDING-VOICE-PROBLEMS-PHYSIOLOGICAL-PERSPECTIVE/DP/1409138745](https://www.amazon.com/understanding-voice-problems-physiological-perspective/dp/1409138745), JANINA CASPER AND RAY COLTON, FLOW PHONATION
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- TITZE, INGO. (2006). VOICE TRAINING AND THERAPY WITH A SEMI-OCCLUDED VOCAL TRACT: RATIONALE AND SCIENTIFIC UNDERPINNINGS. JOURNAL OF SPEECH LANGUAGE AND HEARING RESEARCH. 49. 448-459.
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