

Voice Therapy

- * Symptomatic voice therapy is an approach to work directly on single voice components, such as pitch, loudness, resonance, or respiration
- * Physiologic and holistic voice therapy is an approach to balance the three subsystems of voice production at once. Examples of physiologic voice therapy include Vocal Function Exercises, Resonant Voice Therapy, and the Accent Method of Voice Therapy.

The general goal of voice therapy:

- * To rehabilitate the patient's voice to a level of function that enables the patient to fulfill his or her daily voice and/or speech communication needs.
- * To help a client produce a voice of the best possible pitch, loudness, and quality in relation to the individual's age and gender[1].
- * To reduce or eliminate the voice disorder
- * To prevent recurrence of the voice disorder

Elements and goals of Voice Therapy

- 1) To educate the patient about the anatomy and physiology of the vocal system and how vocal pathology affect the voice production.
- 2) To modify or eliminate inappropriate hygienic behaviors → Hygienic voice therapy
- 3) To modify air pressures and airflow in an attempt to bring about efficient voice production without unnecessary strain → Symptomatic voice therapy
- 4) To improve voice production through better vocal folds approximation → Symptomatic voice therapy
- 5) To modify functional hypernasality or hyponasality secondary to organic pathology → Symptomatic voice therapy
- 6) To reduce laryngeal area muscles tension and effort (vocal hyperfunction) → Symptomatic voice therapy (Chewing exercise, Yawn-sigh technique, EMG biofeedback, and Manual Circumlaryngeal Therapy (Digital Massage)).
- 7) Home practice

Hygienic voice therapy

- * To modify or eliminate inappropriate hygienic behaviors
- * Hygienic voice therapy is considered as the first step in voice therapy programs.
- * These are some examples of poor vocal hygiene behaviors →
 - shouting,
 - talking loudly over noise,
 - screaming,
 - background vocal noises,
 - coughing,

- throat clearing,
- poor hydration,
- taking excessive coffee, alcohol, and smoking
- Poor vocal hygiene may also include the habitual use of voice components in an inappropriate manner[2], which is called functional vocal behaviors.

✱ **The procedures of the four steps of Vocal Hygiene Therapy:**

1. Identify the trauma behavior: →
 - ✱ The clinician will provide the patient with a behavioral chart to record all inappropriate hygienic behaviors
 - ✱ Provide life-style modifications list that help the patient reduce laryngeal irritation
2. Describe the effects: To educate the patient about the anatomy and physiology of the vocal system and how vocal pathology affects the voice production.
3. Define specific occurrences
4. Modify the behavior.
5. Hydration
6. Use a warm mist humidifier in your room
7. Build in periods of voice rest
8. Consider amplification
9. Breathe correctly when speaking

Symptomatic Voice Therapy Techniques

Techniques to reduce laryngeal area muscles tension and effort:

1) Circumlaryngeal Massage Technique:[3]

- ✱ Circumlaryngeal massage is a "hands-on" approach in which patients are trained to massage their neck area while observing different changes in their voice quality.
- ✱ The purpose of this technique is to eliminate pain while speaking, relax muscles in the laryngeal area, and reduce tension in the upper body – all helping to decrease pain and allowing the larynx to relax into a more comfortable position.

Indications:

- ✱ It is used in patients who report neck tension, upper body tension, stiffness, or tenderness along with vocal symptoms.
- ✱ It is also used for muscle tension dysphonia (functional dysphonia)

2) Chewing exercises:

- * Better vocal fold approximation and optimum muscular adjustment of the vocal folds are specific physiologic improvements that result from this technique[4].
- * The muscular adjustments that are facilitated by the chewing approach usually result not only in a reduction of hard glottal attack but also in simultaneous improvements in loudness, pitch, and vocal quality.

Procedures:

Advise the patient that you understand that he or she may feel awkward or silly when first trying the technique but that the technique is, nonetheless, very useful.

- * Have the patient sit facing a mirror. Ask the patient to pretend he or she is chewing a chunk of cotton candy.
- * Tell the patient to chew in a relaxed, open-mouthed, exaggerated manner and to pretend to move the cotton candy around in the mouth with exaggerated movements of the tongue.
- * Do not rush this stage of the technique and do not proceed until the patient is capable of producing a natural and exaggerated manner of chewing.
- * While the patient is engaged in exaggerated chewing, ask him or her to start phonating softly. It may be necessary to model this for the patient.
- * After the patient has become adept at using a relaxed method of chewing and phonating, ask him or her to inhale deeply and to chew and phonate the outgoing air stream. Encourage the patient to let the vocal pitch vary erratically. It is important for the patient to practice chewing and phonating until a relaxed voice is produced.
- * Next, the patient should be told to simultaneously chew, phonate, and articulate brief two- or three-word combinations that begin with vowels (e.g., "I am in," "I am over," "I am up").
- * When the patient begins to demonstrate relaxed phonation with short phrases, additional stimulus materials should be introduced.
- * Practice drills should progress to include chewing sentences at various pitch and loudness levels.
- * Daily practice with the chewing technique should continue until the patient begins to demonstrate diminished laryngeal dysfunction in conversational speech.

3) Yawn-sigh approach:

- * The yawn serves to expand the pharynx and to stretch and then relax the extrinsic laryngeal muscles, thus lowering the larynx in the neck to a more neutral position and permit a more forward placement of the tongue in the oral cavity.

Procedures:

- * Patients are asked to initiate the first half of a yawn behavior.
- * The subsequent sigh should then be more relaxed with less tension noted in the phonation of the tone.
- * From the sigh phonation, the patient is taught to appreciate the sensation of laryngeal relaxation.
- * The yawn-sigh technique is then paired with vowels and then gradually expanded into words, phrases, paragraph readings, and conversational speech.

4) Biofeedback training:

- * The basis of biofeedback is that self- control of physiological functions is possible with continuous, immediate information about the internal bodily state.
- * Electromyographic biofeedback has been used successfully in the rehabilitation treatment of a wide range of neuromuscular disorders.
- * EMG biofeedback training permits patients to monitor electrical activities of their muscles and to exert some control over these areas.
- * This form of biofeedback training has permitted patients to view the tension of the extrinsic laryngeal muscles and to reduce or increase these tension levels utilizing auditory and visual feed-back

Techniques to modify airflow (Respiratory retraining):

1) Therapy approach for Breath support:

- * Respiratory Retraining focuses on coordinating breathing with vocalization.
- * It is often used in conjunction with the treatment of reflux.

Indications:

1. Talking with decreased breath support
2. Professional speakers who may require greater breath support during presentation than during normal conversational speech
3. Patients with excessive cough,
4. Paradoxical vocal fold motion disorder,
5. vocal spasm or laryngeal irritation.

Procedures:[5]

- 1) Ear training: Ask the patient to read a paragraph and tape-record sample of his/her voice and use it to monitor the patient's respiration strategy
- 2) Ask the patient to say as many numbers as possible on one normal expiration and to stop before any force or strain is evident.
- 3) Give the patient a paragraph with phrase markers, and ask the patient to read it aloud with normal inhalation occurring at each phrase marker.
- 4) The discussion between the clinician and the patient should be audio-taped. Then, monitor the tape for inappropriate breathing patterns.
- 5) The patient is asked to monitor his or her voice daily during non-therapy conversational times.

2) Abdominal/Diaphragmatic Breathing Patterns

- * Although the diaphragm is always active during respiration in normally healthy individuals, some use a greater amount of thoracic or chest breathings during respiration.
- * Chest breathing patterns may be adequate for voice support, although a more efficient means of breathing for speech can be achieved when the

abdominal/diaphragmatic movements predominate over other respiratory chest wall movements.

- * The most efficient method of air intake for the support of voice is through the downward contraction of the bottom the diaphragm
- * When the diaphragm contracts downward, the abdomen is forced outward, and the cavity expands to its maximum extent.
- * This expansion permits a greater flow of file air into the lungs. The air may then be used to better support your voice.
- * This technique is simply used to introduce the patient to proper abdominal movement during respiration.

Procedures:

- * The patient is asked to lie down in a supine position.
- * Then, a book may be placed on the abdomen while the patient is asked to observe the natural movement of the abdomen during breathing. As the patient inhales, the book will rise. The opposite movement will be observed during exhalation.
- * The patient is asked to breathe in this manner with out phonation and then gradually introduce the voice component (vowels, words, phrases, paragraph reading, and conversational speech.)

3) Lee Silverman Voice TreatmentError! Bookmark not defined.

- * Specifically designed for patients with Parkinson's disease, the Lee Silverman voice treatment advocates increasing the effort with which patients speak – thereby "pushing" the voice and making it stronger.
- * In essence, patients are trained to exhale higher volumes of air out of their lungs, more forcefully – while simultaneously closing their vocal folds more completely. The result is a louder and stronger voice.

Indications:

- * This regimen was specifically designed to treat voice disorders caused by Parkinson's disease, but is also being increasingly used to treat vocal symptoms in other types of neurological disorders.

4) Confidential Voice Therapy:

Goals:

- * In confidential voice therapy, patients are trained to produce a soft, breathy voice without full vocal fold closure.
- * It is considered as the First-Line Voice Therapy Regimen During Early Recovery Period
- * The main goal, in fact, of this technique is to allow patients to speak while vocal fold health improves.
- * The patient should use the confidential voice in all speaking situations.
- * Then, when the vocal folds have healed, other regimens can be used to bring the voice back to its full strength, tone, and color.
- * Whispered voice is not desirable

Indications:

- * Vocal cord injury
- * Vocal muscle tension

Procedures:

- * Patients typically use the confidential voice for about two to three weeks; after this period of time, symptoms such as pain, fatigue, and substantial hoarseness should improve, allowing more intense therapeutic regimens to be started.

Technique to modify vocal pitch:

5) Therapy approach for vocal pitch:

- * There is great controversy among speech pathologists regarding whether a patient's vocal pitch should be changed when the lowered vocal pitch is due to increased loading of the vocal folds by mass lesions that are secondary to vocal abuse.
- * Often, a patient's vocal pitch is not actually lowered, but is perceived as lowered because of alterations in loudness, vocal effort, and vocal quality
- * Unless a patient is phonating in the range of vocal fry or is phonating at a pitch that makes gender identification difficult, it is probably best not to work directly on changing vocal pitch.
- * Raising the patient's habitual pitch level can be very risky in patients with lesions due to vocal abuse.
- * If the habitual pitch is accidentally raised too high, laryngeal tension will be increased at a time when increased tension could further irritate already sensitive vocal folds
- * If, after extensive consideration, it is deemed necessary to use techniques to normalize vocal pitch, the following procedures should be used:

Instruments:

- 1) A pitch pipe can be used to provide a pitch for the patient to model.
- 2) Specialized instrumentation such as a Visi-Pitch, Tunemaster III, or a Tonar II can be used to monitor the patient's pitch level.

Procedures:

- 1) The patient should be instructed to attempt to sustain the vowel /a/ at the optimal pitch level.
- 2) As the patient becomes more skilled at pitch control, a progression from other vowels to single words phrases, sentences, and monologue should be used until the new vocal pitch level becomes habitual.

Physiologic and holistic Voice Therapy Techniques

6) Vocal Functional Exercises:Error! Bookmark not defined.

- * This is a program of systematic exercises that strengthen and rebalance the subsystems involved in voice production (respiration, phonation, and resonance).
- * Exercises include maximum vowel prolongations and pitch glides using specific pitch and phonetic contexts.
- * Vocal functional exercise is necessary to regain the balance among airflow, to this laryngeal muscle activity, to the supraglottic placement of the tone.

Indications:

- * Vocal fold lesions
- * Muscle tension dysphonia
- * Hypophonia (weak voice)

Procedures:

At home, the patient is taught these four exercises two times each, twice per day, preferably morning and evening.

7) Resonant Voice Therapy:Error! Bookmark not defined.

- * **In brief:** Resonant voice (or voice with forward focus) refers to a voice that resonates or echoes within the face or facial bones. Resonant voice therapy is a tool that voice therapists use to help patients feel the vibrations of their voices along the lips, tongue, and nose, and then use those sensations to help better project their voices. Arthur Lessac, a famous theater coach, first described the resonant voice therapy approach.

Intended endpoint:

- * This approach aims to produce voice with the vocal folds lightly touching rather than closed tightly – achieving sound volume through resonance.
- * The use of humming or chanting is an integral part of this approach

Application group: Resonant voice therapy is now used by vocal therapists to treat a number of voice disorders, such as muscular tension dysphonia and vocal fold lesions.

8) The Accent Method:Error! Bookmark not defined.

In brief: The accent method of voice therapy focuses on improving breathing technique to increase voice clarity. Specifically, patients are taught to use accentuated and rhythmic movements in both their pronunciations and in related body movements.

Intended endpoint: Proponents of the therapy suggest that it helps relax the vocal muscles while also helping to synchronize voice production with a recognizable rhythm produced by another part of the body.

While vocal therapists practice the accent method with some degree of variation, in general treatment takes the form of a therapist asking questions to a patient in a particular rhythm – and the patient responding in that same pattern.

Accent voice therapy helps patients adjust the timing and rhythm with which they breathe and accent words.

Some form of additional stimulus may be used, such as a body movement or a drum or tambourine, to help patients form a series of exaggerated syllables or words.

These exercises progress to longer phrases and eventually sentences. Throughout the exercises, the accentuated rhythm used during speaking is maintained, while the body movements and other external stimulus that were used initially are reduced or eliminated.

Application group: The accent method was developed in Europe to treat many types of voice disorders. Although some voice therapists in the United States favor its use, the accent method is more commonly employed in Europe.

Psychogenic Voice Therapy

- * Psychogenic voice therapy is based on the assumption of underlying emotional or psychosocial behavioral causes for the voice disturbance.
- * The relationship of emotions to voice production has been well documented in the literature starting as early as the griddle 1800s to the presents.
- * Psychogenic voice therapy focuses on identification and modification of the emotional and psychosocial disturbances associated with the onset and maintenance of the voice problem.
- * When the psychogenic causes are resolved, the voice disorder dissipates.
- * Voice pathologists must develop and possess superior interview and counseling skills, as well as the skill to know when the emotional or psychosocial problem is in need of more intensive evaluation and therapy by other professionals.

Work cited

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