

**Kit Roberts, M.A., CCC-SLP**  
**Voice Evaluation and Treatment**  
**1980-2007**

**Evaluation Protocols for Voice**

I always greeted my voice patients in the waiting room with a smile and a handshake. Then I handed them the *Voice Self-Evaluation Chart* from Dr. Cooper on a clipboard and asked them fill it out along with their *Patient Information* form. I told them not to worry about #15 and #25, as we would discuss those together. Giving them a few minutes to fill it out, I went back to my office to make sure I had everything ready.

After a few minutes, I returned to the waiting room and asked the patient to join me in my office. I collected the physician's referral, necessary for insurance payment.

Reviewing the voice self-evaluation chart, I checked the patient on #25 by palpating the laryngeal horns (always asking their permission if I could touch them first). If they experienced soreness, on one or both sides, I noted it. I asked about #15, as I showed them where their strap muscles were on their neck. Then I asked them to point to where it hurt when they talked. They generally pointed to their throat. The patient knows where it hurts, and thus, where the problem lies.

Taking a thorough history had two effects. First, I collected important information about the patient and their voice problem. Second, it gave the two of us time to develop a relationship: one in which they knew I was listening to them and trying to understand their

problem to the best of my ability. After completing the four-page *Voice Evaluation* generated with Dr. Martin, which originated with Dr. Lapeer, I knew my patient well.

One of the most critical questions they answered was, “What importance does the patient place on his/her voice?” Without exception, they all responded with a desperate admission that it was critically important. Without their voice, their lives had diminished. It affected their work, their family relations, and their friendships. Singing at church, talking with their mother on the phone, or continuing with the cheering squad had ceased. By the time they got to me, they had suffered for months or even years. Helpless, they questioned if anything could be done for them. They did not know how to resolve their problem. They longed for an urgent resolution. Their very being was in jeopardy.

To complete the evaluation, I recorded the patient’s voice on a \$450 professional tape recorder. The quality was excellent: no hissing, like the \$40 recorders from *Radio Shack*, an electronic products store. They read the *Voice Recording Protocol*, which contained the *Rainbow Passage*, a phonetically balanced paragraph. I always had the client read it to themselves first, to get familiar with the words. If they weren’t familiar with some, like *prism* or even *arch*, I modeled the words for them. This wasn’t a reading test, it was a voice test, and I didn’t want them getting tripped up on obscure words.

I used a simple, desk-top electronic keyboard with five octaves to determine pitch range. It was about two feet long and I bought it in 1986 at *Costco*, a discount warehouse, for \$55. Having the client start on middle C (or lower for a man) and saying the syllable “la,” I asked them to sing down the scale as I played each white key, and sang with them to get them started. Then, I had them go back to the middle and “la, la” up in pitch, until their vocal tone sounded breathy or raspy. They had to produce a clear tone for it count as part of their range.

As we completed the recording, I listened for hard glottal attack at the beginning of words that started with vowel sounds. I monitored for glottal fry at the ends of sentences and while singing and speaking. I identified their habitual speaking pitch. To determine if they had laryngeal rise, I held my fingertips lightly on their Adam's apple as they slid their voice down and up on an "ee" sound. If they pulled the Adam's apple up on higher sounds that indicated incorrect singing technique, which could lead to weakness of the arytenoids. It correlated to statement #25: a pattern often seen in people with vocal hoarseness or nodules.

As they hummed *Happy Birthday*, I checked their habitual pitch again with the keyboard and listened to the quality of their tone, compared with speaking. During the recording, I evaluated the patient's volume for speaking, playing, and yelling. I used a simple sound-level meter from *RadioShack*®, also bought in 1986. It cost \$40. I held it 8" in front of the client's mouth to get a standardized volume reading. We didn't have the computer programs to evaluate all of these vocal parameters as we do today. Even so, when the first electronic/computer voice programs were designed they cost \$6000. I didn't have that kind of money. I had a different, complex machine that could do it all: my brain. It was highly trained and could gather information and analyze someone's voice, while at the same time observing their breath, swallowing, etc. And I enjoyed it.

To determine how the patient was breathing, I asked if I could put my hands on their back, shoulders, tummy and upper chest while they read the *Rainbow Passage*. I requested that they keep reading it over and over until I asked them to stop (usually two times). While they read, I observed them. Then I verified what I saw by feeling their shoulders, the lower rib area on their back, and the stomach and upper chest area. I checked for clavicular, thoracic, or

diaphragmatic breathing. I wanted to feel the breath coming from the lower ribs and tummy, not the upper chest or clavicle area.

I always took the s/z ratio with a stop watch. To do this, I asked my patient to take a big breath, make a tight /s/ sound, and say it slowly, making it last as long as possible. Then, do the same thing with the /z/ sound. If the /z/ is half as long as the /s/ or even more, for example 15 seconds for the /z/ and 32 seconds on the /s/, it indicates that true vocal cord nodules are likely. Otherwise, the numbers should be the same: they are identical sibilants, with one being voiceless and the other voiced. Because nodules prevent the vocal cords from coming together, air escapes, and the voiced sound, /z/, shortens.

After determining how the patient was misusing her or his voice, I presented my findings at the end of the one hour appointment. I stated my prognosis for improvement. It might have gone something like this.

“I’m going to tell you what I found. Your vocal range was two octaves and five notes. A range of two and a half octaves is normal, so that’s good. Your volume for conversation was between 70-75 dB, which is within normal limits, and you were able to yell at 95 dB, which is very loud and normal. Your habitual pitch was slightly low, which can add to vocal strain, so I’d like to raise that a bit.

“When I had you say the vowel sounds separately, you exhibited hard glottal attack, meaning you made a hard staccato sound at the start of the vowel. That indicates hypercontraction of the voice muscles. But when you strung the vowels together, like singing, you were okay.

“You spoke with glottal fry when you read the passage, meaning your voice made cracking sounds. That means you are hypercontracting the voice muscles when you talk.

“When I had you slide your voice up and down, you used laryngeal rise. This is incorrect singing technique and causes vocal strain. You also had soreness on the left side of your arytenoids, which can be a result of incorrect singing technique and hypercontraction of the laryngeal muscles. That’s why your voice hurts when you speak and sing; you are squeezing the small muscles of your voice until they are sore.

“Your s/z/ ratio indicates that you have a vocal nodule, which we already knew from your referral from Dr. Smith. You were able to sustain the /o/ sound for 13 seconds, which is slightly below normal. This weakness is caused by air escaping faster than usual, because the nodule forms a gap between your vocal cords, preventing the cords from vibrating evenly together.

“When you hummed *Happy Birthday*, your voice was higher and clearer than usual. This indicates that a shift in vocal focus, from the lower throat to the facial area is better for your voice.

“Finally, you are breathing with your upper chest, and raising your shoulders when you talk, which is stress pattern breathing, clavicular breathing. That’s the worst for speech. You also exhibited backwards breathing, which we will discuss later. Breathing high in the chest engages the upper lungs, which don’t have as much air capacity as the lower lungs. So we want to expand your breathing down to the mid-section, what we call diaphragmatic breathing.

“To summarize, I need to teach you how to reduce laryngeal tension, raise your habitual pitch slightly, breathe from the diaphragm, and focus your voice in the facial mask.

“Since you haven’t had your vocal nodule for more than two years, the research tells us that it should be gone within a couple of months: if you do what I say.

“If you want to start treatment, it will take six sessions for me to teach you everything I know about correcting your voice. We’ll meet once a week and I’ll give you handouts and a recording of each session to practice with at home. By the end of the six weeks, you should be able to speak correctly for a ten minute conversation. At that point, you can go on your own. We can always add in a session or two later for a refresher, or if you run into problems. Let me get my calendar.”

The patient left their evaluation knowing exactly what they were doing that caused their voice problem *and* how I planned to help them fix it. I’m sure their heads were spinning with all of the information and new terms, but when they returned for their first appointment, it would be addressed in detail.

### **Voice Evaluation**

The four-page *Voice Evaluation* interview is thorough and informative. Be aware that the patient may reveal illnesses that are not on this form. For example, under *Diseases*, one of my patients told me she had *bulimia*: it’s not listed. Just write it down. Obviously, bulimia may affect the vocal cords as they are repeatedly drenched in stomach acid. Verbally ask each question and write the answers on the form. The answers will comprise the content of your final report.

Some questions may seem repetitive or unnecessary, but ask them anyway. As the interview continues, the patient remembers more details and feels more comfortable sharing things that might be a bit embarrassing or distressing to them. The answers result in diagnostic information that is used to form a prognosis. Will the prognosis be good, fair, guarded or poor? A thorough history, along with a few attempts to correct the client's voice before they leave the appointment, will help determine that. A normal voice should be attained within a couple of minutes of practice. Otherwise, there are underlying issues and the prognosis will change from good, to

To complete the evaluation, I typed my report and sent it off to the doctor and insurance company. I developed an evaluation template for my voice patients that I kept on the computer. It contained all possible symptoms and most medical diagnoses. All I had to do was customize the history and the prognosis. I deleted any wording that did not relate to an individual patient. I put an X on the patient's abnormal vocal parameters. Since a medical condition existed, I always referred to the person as a patient. People who consulted me for accent reduction, for example, I referred to as clients. When I contracted on the rehab floor at the hospital, my clients were patients. When I worked in the schools, I saw students. SLPs work in different settings and we adjust our vocabulary accordingly: patients, clients, students.

### **Treatment of Voice Disorders**

At the beginning of the first session, I reviewed the patients' goals and objectives. I reminded them, for example, that they had glottal fry and hard glottal attack, which indicated hypercontraction of the muscles of the larynx. That's why it hurt to talk; they were overworking those muscles. I showed them pictures of the larynx drawn by Frank H. Netter,

MD and pointed out the relevant physiology. I kept the terms simple. They developed an understanding of their vocal anatomy.

Dr. Cooper remarked we should be able to talk 14 hours a day, with no trouble. I revealed that to my patients, some of whom could say only a few sentences without pain. With the tips of my index fingers together, I explained more about the vocal cords. I showed them how the cords are attached in the front, and apart in the back. When we speak or cough they come together. The higher sounds are made toward the front of the cords and the lower sounds are made toward the back. Displaying my little fingernail, I asserted that the vocal cords were about the same size. They were very small. With the vocal cords, less equals more: the less tension, the better the sound; the less force, the more reliable the voice; the less strain, the richer the quality.

Educating my patients, I might say something like this.

“The vocal cords are apart when we are at rest, and just breathing. When we talk, sing or cough, they come together. They aren’t capable of vibrating on their own; they only vibrate if air flows between them. So it’s your breath that causes the vocal cords to flow together and vibrate—to make your voice. Without molecules of air, you couldn’t make a sound. In fact, if we were to drop an atom bomb on the moon, we wouldn’t hear a thing. Since there is no air on the moon, there are no air molecules to vibrate and carry sound. So everything I’m going to teach you will allow more air to flow effortlessly through your vocal cords, so you may have a normal voice.”

Then I popped a video into the player that showed the vocal cords in action. It was filmed with a tiny camera at the end of a small, flexible tube threaded through the nasal passage of a singer. It showed a beautiful view of her vocal cords producing low and high



sounds. We viewed total hypercontraction of the laryngeal muscles with resulting glottal fry and hard glottal attack. Then, the video demonstrated laryngeal rise: incorrect singing technique. Finally, we observed a person with a vocal cord nodule make successive vowel sounds, and witnessed the *hypo*contraction of their arytenoids (muscles at the back of the vocal cords), which did not approximate during phonation, as they should have. This sign of exhaustion of the musculature correlated to #25.

As we watched the video, I narrated. I started by saying the vocal cords had been enlarged 450 times by the magnifying camera and in reality, they are about the size of my little fingernail. I held my fingernail up for them to see. I paused when necessary to show my patient what they were doing that caused their problem. This took about three minutes and was time well spent. Who knows what it looks like down there? Even though I had learned all about the voice and seen the drawings, until this video came into being, even I could not visualize it *this* accurately. I wanted my patients to know everything I knew about the voice before they left my office, so they could correct their problem now, and self-correct it in the future. This sort of educational tool is indispensable.

Next, I gave them their *Voice Folder*, and asked them to bring it to every session. I put all hand-outs and homework assignments in it, and always wrote the date of their next appointment on the cover before they left the session. I reviewed their goals and objectives from the evaluation report, which were much the same for everyone: Establish normal vocal parameters by a) decreasing hard glottal attack and glottal fry, b) increasing diaphragmatic breathing, c) establishing optimum pitch, d) focusing voice in the facial mask, and e) incorporating these into conversational speech.

My treatment protocol for people with voice disorders utilized exercises that I gleaned from various trainings. I presented lessons in the same order and gave the same exercises to everyone, despite differences in medical diagnosis: vocal cord nodules, vocal cord polyps, vocal hoarseness, and spastic dysphonia. I always started with exercises to reduce tension in the laryngeal area and to focus the voice in the facial mask. After relaxing phonation, I introduced breath support. The entire time, I reinforced optimum pitch, using the keyboard and modeling for the client.

Six, typical 50-minute voice sessions might look like this:

### **Session 1**

1. Explain the voice, show video, review goals and objectives.
2. Intro Chewing Approach, give homework (HW) to practice 1x/day.
3. Intro Facial Mask Focus (FMF), low voice vowels, give HW, 1x/day.
4. Give client the session recording. Ask them to practice with it daily.

### **Session 2**

1. Review Chewing, HW 1 x a day. (Always check how often they practiced.)
2. FMF, review HW, 1x day.
3. FMF, Low Voice Sentences at A3 (or their optimum pitch), counting, short answer questions.
4. Chewing initially poor, up to 2-3 syllables, did well. Short answer chewing in conversation.
5. Give client the session recording. Ask to practice daily.

### **Session 3**

1. FMF review, HW – 2 x a day.

2. FMF, High Voice Sentences. + Give HW
3. Chewing review with 3-syllables, sentences. Give HW
4. Introduce Belly Breathing, give HW.
5. Give client the session recording. Asked to practice daily.

#### **Session 4**

1. Review Belly Breathing. + Doesn't need to practice again unless they want to.
2. Review FMF HW. *Hum me-me* with voice button at the beginning of each response. Staying on pitch. Doing well with sentences. Move to short answer conversation and reading short paragraphs. Give HW, read newspaper with FMF, 30 min/day.
3. Review Chewing, use it with the first two syllables when reading sentences and answering short answer questions, then let go into FMF. HW
4. Give client the session recording. Ask to practice with it daily.

#### **Session 5**

1. FMF in sentences, paragraphs, conversation, reading whole page of information with *hum* at the beginning of each paragraph. Still needs to re-focus her voice at the beginning of each paragraph and about every 45 seconds in conversation. HW
2. Re-do Self Evaluation. Voice no longer husky or hoarse, throat is not sore, voice doesn't fatigue, throat not dry or scratchy, no tension in throat, headache gone, arytenoids tenderness is gone, and no tracheal pressure.
3. Give client the session recording. Ask to practice daily.

#### **Session 6**

1. Speaking with FMF, relaxed jaw, optimal pitch and mid-section breathing.

2. Practice with reading paragraphs, dialogue, and monologue. Patient can self-correct and self-orient when she gets off track. She is able to maintain 10 minutes of monologue describing a vacation with no pain or glottal fry, keeping her voice focused in the mask.
3. Advanced voice exercises: how to shout, how to strengthen the voice.
4. Give client the session recording. Refer to it as needed for practice.
5. Patient is discharged and asked to contact me if she feels she needs a refresher.

### **Reducing Laryngeal Tension**

In the treatment of voice disorders, reducing laryngeal tension must come first. I started with the chewing approach. If patients had temporomandibular joint syndrome (TMJ), or difficulty with this exercise, which was rare, I used the yawn-sigh technique. After practicing either of these methods, patients vocalized words with soft glottal attack. They read a variety of initial-vowel sound words, like “about, even, on,” while adding a tiny /h/ sound at the beginning of each word, to prevent hard glottal attack. Soon they could feel when their vocal cords were coming together and how much tension they were applying. They learned soft glottal attack and reduced the hypercontraction of their vocal cords.

Whenever I introduced an exercise, I always demonstrated it first. I took care to make sure the patient understood the lesson, then monitored their efforts closely and gave them immediate feedback to correct any stumbles on their part. I gently shifted them in the direction I wanted them to go. In other words, I shaped their behavior.

Additionally, I constantly asked them what they were doing differently with their voice to make it change. Voice therapy is about going inside, not outside. It’s about becoming aware of what you are doing with your laryngeal and oral musculature. It’s a sensory-cognitive

process: when I do this (say *hum*) - I feel that (vibration on my lips and nose), when I do this (speak in the facial mask) - I hear that (a smooth voice). The patient learns to think about what they are feeling and hearing while they are speaking in a new way. This increases accurate repetition and enhances their ability to self-correct and establish new motor pathways and habits.

Dr. Emil Froschels developed the *Chewing Exercise*, my first choice to relax phonation (voicing). Reading off of the copy I sent home for their practice, I described what to do, and demonstrated it before I had the patient copy me. I emphasized the importance of *thinking* chewing (not talking) while performing it. I continued, “One of the easiest ways to learn to relax your voice is to take an action you do every day with a relaxed larynx, and superimpose it over speaking. You will quickly get the feel of having a relaxed throat when you talk. So...”

After we finished the exercise, I asked them to practice it three times a day, for three days, and demonstrated how little time it took once they were familiar with it. Then I put the exercise sheet in their folder and moved on to *Facial Mask Focus*.

The Chewing Exercise may be found on page XXX in the Appendices.

### **Increasing Facial Mask Focus**

Second in the sequence of treatment exercises is facial mask focus. I wanted patients to get their voices out of the throat area or “in the basement” as Dr. Cooper would say, and into the facial mask where it belonged. This exercise alone could reduce laryngeal tension and increase optimum pitch. I used it with every person with a voice problem.

When a patient’s pitch was too low, or their vocal focus was in the throat instead of the facial mask, I explained how that habit caused hoarseness and/or vocal cord nodules/polyps/strain, etcetera. Dr. Cooper referenced Henry Kissinger as an example of

someone whose voice was in his throat. Kissinger had severe glottal fry and poor volume. If a person with glottal fry tries to increase their volume, it may cause vocal nodules to form. So while Dr. Kissinger was speaking in a maladapted way, he was cautious to not injure himself by speaking loudly. Unfortunately, microphones don't project glottal fry very well, so he was difficult to understand at times.

I showed my patients the schematic of a head from Dr. Cooper's book, *Change Your Voice, Change Your Life*, identifying laryngeal focus, oral focus and nasal focus. I explained that the voice is built on a megaphone basis, with the weakest sound in the throat, and the loudest sound between the chin and the eyebrows. A healthy voice needs to be focused in the oral/nasal area. Instead of projecting the voice from the lower throat, it needed to project from between the chin and the eyebrows, in an upward and outward fashion. All this is meaningless, however, until patients experience facial mask focus for themselves.

"We're going to practice speaking with facial mask focus now. To begin with, I want you to focus your attention on your lips and nose. Rest your lips together gently and say 'hum.' Say it until you feel the sound vibrate on your lips and nose. Do you feel it? Good. While you hum, I'm going to jiggle right here, in the middle of the solar plexus, on the 'magic voice button.' So let's try it, you say '*hum.*' Keep your mind in the mask. Keep the sound going and take a breath whenever you need it. Can you feel the vibration? Point to where you feel it (lips and nose). Good. What's different about that and your usual voice, where do you feel your old voice (points to throat)?"

"Now I'm going to have *you* activate the magic voice button. Place your fingers a couple of inches down from the bottom of your sternum, on your solar plexus. Jiggle it gently and quickly, like I just showed you. This is mid-section breathing.

“Keep your mind in the mask and say *hum*, as you press the voice button. Feel the buzz on your lips and nose. Now I’m going to add another sound to extend the amount of syllables you can say in the facial mask. Say *hum me-me*. Say it all together, like it’s one big word, and say the *me-me* in the same place you said *hum* and felt the vibration. Press the voice button on the *hum* and let go of it on *me-me*. Allow your air to keep flowing from the mid-section.

“Now we are going to add counting to increase the amount of words you can say in the facial mask. Match me. Say *hum, me-me one. Hum me-me two. Hum me-me three*. Where is your mind? *In the mask*. Where is your voice? *In the mask*. Did it stay in the mask or fall into the basement?” In this way, we continued, counting to ten after *hum me-me*.

For patients whose voices are too low in pitch and/or focus, I started them with the *Low Voice Vowels* list. These vowels help to bring vocal focus higher in the mask. If their voices were too high in pitch or focus, I started them with the *High Voice Vowels*. The vowel sounds on this list facilitate voice placement lower in the facial mask. Eventually, I gave them all of the vowels to practice for homework: they had to speak every sound in the mask, not just some.

I frequently asked my voice patients what they felt after each production. Did their voice stay in the mask or did it drop into the basement? Did they feel the buzz before they let go of the voice button? Where was their mind: in the mask or somewhere else? Did they maintain continuous phonation or stop and take another breath? How did their throat feel: more open or more closed, more relaxed or more tense? How did their voice sound: more smooth or more scratchy?

Changing the way you speak is both an inner and outer process. There are ideas and bodily tensions that must be surrendered. There are habits and images that must depart. Patients become aware of what they are doing, where they are focusing, and how their voice sounds using their own sense of perception. Changing the voice is an instructive and uplifting process. It taught the patient to go inside and bring their true voice out, again and again. Repetition increased their self-awareness, and using choice and contrast questions hastened their victory.

Most patient's voices will be too low in pitch and focus. If that is the case, begin with the Low Voice Vowels practice sheet.

If the patient's voice is too high in the mask (nasal) or in pitch, start with the High Voice Vowels exercises. This list will bring the vocal focus down into the oral area.

Once your patient is 80% successful with the vowel combinations, start them with Low Voice Sentences immediately, in the same session. These sentences are loaded with vowels to get their pitch high in the facial mask.

The High Voice Sentences are written with vowels that improve an oral focus, for those who are too nasal. I used them with all patients regardless, to create their own vocal balance. The numerous initial vowel words are a trap for people with hard glottal attack. Teach them how to keep continuous phonation as they say these words in the facial mask, without hypercontracting their laryngeal muscles. Vowels are made in the larynx and the most susceptible for tension.

Practice materials for Low Voice Vowels, High Voice Vowels #1, High Voice Vowels #2, High Voice Sentences and Low Voice Sentences may be found on pages XXX-XXX in the Appendices.

### **Increasing Diaphragmatic Breathing**



Once patients reduced their laryngeal tension with the *Chewing Technique* and increased *Facial Mask Focus*, they were ready to improve their breathing. Ask your patients to “lie on the floor on your back. Put one hand on your belly and one hand on your upper chest.” (I kept a thick comforter and a small pillow in my office for this part of the exercise. I wanted my clients to be comfortable and not have to lie on a possibly dirty floor. Remember, this was Alaska. Otherwise, I would have had a couch!) “Breathe in slowly and fully and feel what moves. Which hand moves and how does it move? Is your upper hand going up, down, or not moving at all? Is your lower hand moving up, down, or not moving at all? Check yourself as you breathe in and out.”

Give your patients a moment to feel what they are doing. You probably discovered that they were backward breathing during the testing, so don’t give anything away. They need to discover for themselves how they breathe. It’s amazing how many people breathe backwards.

If the patient feels their hand placed on their upper chest move up as they inhale, and feel no action with their lower hand on their abdomen, they are *backward breathing*. If they feel their lower hand go up as they inhale, that is correct for abdominal breathing. The upper hand shouldn’t move at all or very little on either the inhale or the exhale. The lower hand should go up on the inhale and down on the exhale. Correct them if they are backward breathing and reinforce the correct breathing pattern.

Sometimes, you have to put a heavy book on the patient’s abdomen and have them physically move it with their muscles to get the correct feel of inhalation and exhalation.

Explain to your patients that the diaphragm is the muscle we use for breathing, although other abdominal muscles assist, especially on the exhale. These are large muscles and we want to use them instead of the small muscles in the upper chest region between the ribs— the intercostals. Abdominal breathing is relaxed breathing like you would see in an infant.

Describe how the diaphragm looks like an upside down bowl, sits right underneath the ribcage and attaches near the spine. Use your hands to show that when the diaphragm contracts, its bowl shape moves down and out, flattens, and pushes on the stomach area. As it moves downward, it drags the lungs with it, and along with expanding the ribcage, causes air to move deep into the lungs. Then as it relaxes and goes back into the upside-down bowl shape, it pushes the lungs up and the air is expelled. If they feel their upper hand moving when they inhale, the upper lungs are being filled, using more of the intercostals. But that is a small amount of air. We want the lower lungs to be filled, so patients should feel their lower hand move out as the diaphragm pushes down on the belly. Once they get the feel of how their body moves when they are breathing correctly, practice it a few times while they are lying on the floor.

Then add a *hum* sound (which they are familiar with doing) as they exhale, making sure that their lower hand contracts in, not out, as they hum. When they are accurate for several breaths and hums, have them turn to the side, push themselves into a sitting position with their hands and arms, and sit for a moment. After you know they aren't dizzy, have them sit in their chair. Practice mid-section breathing a few more times in the sitting position, using hand placement for feedback. Add a *hum* sound on the exhale, making sure their upper hand stays still and their lower hand moves in during the *hum*. Tell them to practice this at home when they are sitting watching TV and when they go to bed.

If breathing backwards is a hard habit to break, teach your patients *Bellows Breathing*. Practice it in the treatment room before you send the exercise home, making sure they can succeed at it. Never give homework that a patient will end up practicing incorrectly. Usually, *Bellows Breathing* is given at the 2<sup>nd</sup> treatment session. As the clinician, you don't want to

increase the patient's breathing abilities until you have reduced their laryngeal tension. Otherwise, their voice could become worse, as they try to push more air through hypercontracted vocal cords— bad.

After practicing Bellows Breathing exercise, I had a patient report to me that he tightened his belt by two holes. I think he overdid it!

Once mid-section breathing is established, treatment continues with increasing the length of utterance while using diaphragmatic breathing, facial mask focus at optimal pitch, and reduced laryngeal tension. Patients read words, sentences, and paragraphs. They answer questions, have a dialogue with me, and report on various topics using a monologue.

When talking with friends, I advise them to say “mum hum” frequently, to keep their voice in the mask and to rest their folded hands across their stomach area to feel their mid-section breathing. Before discharge, we practice the *Advanced Exercises*. I learned these from Dr. Gould. I presented them during the last session, when I knew that the patient had a good understanding of how to have a healthy voice and keep it that way.

### **Possible Psychological Problems**

For patients with vague or unusual vocal issues, I used the Zero Point Thoughtform Dissolving Process. I took three-day training with Dr. Gabriel Cousens, Psychiatrist, and determined that this process would be useful on a limited basis. It helped both the patient and I understand any unusual circumstances surrounding their problem, for which they could then seek help from a psychologist or psychiatrist.

The Zero Point Thoughtform Dissolving Process may be found on page XXX of the Appendices.

If you are an SLP who works with singers or a singer with voice problems, I would recommend taking the *Estill Voice Training*. Jo Estill, a singer who pioneered voice research, completed the coursework for a PhD in Speech and Hearing. Her resulting system is used all over the world and is eligible for continuing education credit with the American Speech and Hearing Association. I took the program a few years ago and it helped me understand my own singing voice. It won't replace therapy for people who aren't speaking correctly. It is possible to speak incorrectly and ruin your singing voice, and vice versa.

### **Voice Disorders Protocol Summary**

1. Have the patient fill out the self-evaluation form.
2. Complete the 4- page Voice Evaluation interview.
3. Record the patient with the Voice Recording Protocol
4. Review the results with your patient and schedule a weekly, 50 minute session for six weeks.
5. Tally your results, write the report and send it to the doctor.
6. Teach your patient in this order: reduce laryngeal tension, facial mask focus, diaphragmatic breathing, optimal pitch, advanced skills and Thoughtform Dissolving process as needed.
7. Move from syllables, to automatic speech, to short answer, to reading sentences and paragraphs, finishing with conversation in every session at the patient's ability level, if possible.