Paparella: Volume III: Head and Neck

Section 2: Disorders of the Head and Neck

Part 5: The Larynx, Trachea, and Esophagus

Chapter 30: Caring for the Vocal Professional

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Who is a "Vocal Professional"?

The term *vocal professional,* as it relates to this discussion, can be a singer, actor, public speaker, trial lawyer, salesman, or any other individual who uses the voice as a primary means of occupational communication. This chapter will emphasize the singer, actor, and public speaker; however, the principles described apply to anyone who is even minimally dependent upon vocal communication in his or her profession.

Each occupation that involves voice production has its unique requirements, although there are many factors in common, the first of which is the need to communicate. The second requirement is to produce a vocal *sound* that is both dramatic and compelling.

A singer may specialize in classical, popular, or rock musical styles. The voice quality that is necessary to perform each of these styles varies considerably. In a classical singer, any harshness or hoarseness is readily perceptible and undesirable. A rock singer, in contrast, may wish to "color" the voice with a certain amount of harshness or graininess. "Gypsy" performers are require to combine singing and dancing, which presents the problem of maintaining sufficient breath support to sustain vocal power and tone during or after a physically taxing dance routine. An actor's vocal production requirements vary from Shakespearean formality to light comic banter. An actor may need to produce enough vocal power to reach the back rows of the audience in an outdoor band-shell performance, or he or she may need to exchange power for nuance in an intimate television play. The end result in any situation is basic communication. An actor must be heard and understood by the audience. Actors who do not fulfill this requirement are usually undistinguished, and their careers are readily extinguished! Although some actors are fortunate in their natural vocal talents and may require little training, the vast majority require proper preparation, study, and continued supervision of vocal production.

A public speaker's milieu is more difficult to define because the definition of public speaking is so broad. Lecturers, schoolteachers, and politicians may all be considered public speakers. In most instances, their vocal preparation has been minimal, as has their training in style, audience approach, and environmental adjustment. Yet, here again, the primary goal is communication.

To be able to use the voice as a powerful instrument of communication, the vocal professional must study and prepare for this occupation. An actor's or singer's more demanding vocal needs require continuous training to both improve and maintain skills in vocal production.

The Laryngologist's Role

To a vocal professional, the laryngologist is part of the career support team. Although it is desirable to cooperate with other members of the team - teacher, vocal coach, manager-agent, producer - the laryngologist's responsibility is to first consider the patient's health and then the professional's career. Naturally, this set of priorities is a part of medical ethics and training.

Next, the laryngologist must recognize the distinction between the vocal professional as a patient and other patients: to a vocal professional, the career has top priority. The growth and success of this career is dependent on the professional's ability to use the voice not just as a means of communication but also as the charismatic force behind the performance. This is true not only for singers but also for actors and public speakers, who need to be more than merely understood. They must garner audience attention by painting pictures with their words, an art achieved by hard work, training, and optimum health and flexibility of the voice.

Anatomy and Physiology

The Body As Vocal Instrument

Voice is an adaptive function of the entire body rather than a product of the limited area of the vocal production mechanism. The importance of considering the entire structure is exemplified by any illness that interferes with the body's large muscle groups. For example, if there is abdominal musculature impairment following a surgical procedure, the ability to support or help create a power source of energy required for expiratory effort is impaired. If the shoulder girdle is involved in muscle spasm or has been injured, lifting of the rib cage is restricted. Pain or injury to the back musculature usually interferes with proper vocal function because the patient will, even subconsciously, restrict movement so that a careful listener will detect a hampering of vocal production.

Since anatomic and physiologic function of vocal production is affected by the entire structure of the body, posture plays an important role. Stiffness or pain in the limbs and upper and lower extremities can result in deformities in posture that, even if slight, will affect vocal production. It is the voice teacher's responsibility to make the student aware of posture; however, some postural problems may require physical therapy.

Neural control is intimately involved in the interrelationship of the respiratory apparatus and the laryngeal functional muscles, both intrinsic and extrinsic. Any fault in neural production that alters this relationship will affect vocal production. The detrimental results are obvious in neurologic disorders in which there is muscular interference, such as parkinsonian disease and strokes. Equally, the effect of emotional tension or stress will alter the ability to compensate and will create muscle tension as a secondary factor. Other forces that alter the anatomy and physiology of the vocal apparatus are local swelling caused by systemic infection and vocal abuse caused by traumatic events.

One must consider the entire body then as the vocal *organ.* Those portions of the vocal organ directly involved in vocal production are the respiratory tract, the vocal folds, and the vocal tract. The vocal *tract* is the supraglottic area - larynx, pharynx, and nasal and oral

cavities.

Vocal Production

The vocal production mechanism, which includes the respiratory apparatus, the larynx, and the supraglottic and articulatory mechanism, can be considered a bellowslike mechanism. The entire respiratory system - that is, the lungs, rib cage, and the musculature that operates it - is equivalent to the expansive portion of a bellows, whereas the larynx functions similarly to the narrowed portion of the bellows.

The back and chest musculature lift the rib cage and expand it to increase the lung's capacity for air volume, whereas the abdominal muscles control the descent of the diaphragm, allowing downward expansion of the thoracic cavity.

At the interposition of the glottis, expiratory effort causes alternate buildup and release of air pressure as the vocal folds mechanically open and close. As a pulsating stream of air passes through the oscillating vocal folds, it is translated into sound. This raw sound resonates against the chamber formed by the larynx, pharynx, and oral cavity and is then shaped into organized sound or language by the tongue, lips, and jaw.

Some misinformed persons speak of diaphragmatic control in vocal production. Bear in mind that there is no expiratory force of the diaphragm. Rather, the abdominal and back muscles create the force for expiration by constricting both the abdominal content and the width of the rib cage. The diaphragm is involved in the inspiratory force energy because its descending position, which is controlled by the abdominal muscle, partly determines the lungs' air capacity.

Care of this system depends upon awareness of its controlled structure. The vocal professional, especially a singer, works to increase the structure's efficiency rather than to alter its inherent nature and quality. There is no question that the training of the respiratory and vocal functions is essential in order to improve vocal efficiency both in speaking and in singing. And one has only to look at an infant's abdomen rise and fall in respiration to realize how vital musculature force is in respiratory function. The Victorian training from childhood that admonishes "stomach in, chest out!" is contrary to normal breathing patterns and must be dealt with by reteaching or deprogramming.

Above the pulmonary structure lies the highly adapted laryngeal structure, the lower portion of which is the glottal area. The glottis consists of two lips or folds - one is the true vocal cords (the vocal folds) and the other is the false vocal cords - and the laryngeal ventricle, which is the space between these folds. It is essential that both the true (vocal folds) and false vocal cords remain covered by a moist mucosal layer.

The intrinsic muscles of the larynx position the vocal folds to effect the desired frequency of vibration. The vocal cords, particularly the vocal folds, change not only position but also stretch. The Bernoulli effect acts on the vocal folds as they are rhythmically forced apart by increasing air pressure during expiration, then they are drawn together by the negative pressure of the air flow. This action creates a sound wave that vibrates at a frequency ranging from about 80 cycles to about 400 or more cycles/second.

The extrinsic muscles of the larynx position it vertically in space. Using extrinsic laryngeal muscle action, the singer or speaker can make the resonating chamber larger or smaller and looser or firmer, which alters the quality of the crude sound wave produced by the vocal folds. A singing voice teacher or a speech teacher gives instruction toward adapting this apparatus.

The crude sound wave is adapted in the supraglottic area. The sound continues to resonate in the pharyngeal area. After it passes the oropharynx, the resonated sound is shaped into articulated sound by the action of tongue and lips and by the position of the jaw. It is not enough for the laryngologist to understand the mechanism regulating vocal sound production. He or she must also understand the degree of control over and sensitivity to the action of each mechanical part necessary to create artistically produced sound.

The Patient's History

When taking the history of a vocal professional, a laryngologist must be careful, sensitive, unrushed, and focused on developing an understanding of the immediate problem. The history must analyze the nature and extent of previous training, relate prior problems, elucidate the type of vocal demand required by the patient's current professional role - including rehearsal or preparation demands, and finally, determine the frequency of the problem (ie, does it arise from a singular preparation effort or is it ongoing?).

Another important consideration is the patient's age - not only chronologic but also physiologic. Since the laryngologist and the patient have the higher criteria of vocal performance to consider, there is no question that age may be a serious problem. Excessive vocal training at too young an age may be abusive and stressful. Training must be directed toward helping the individual through periods of stress; it must not be the cause of stress. An older patient may exhibit the loss of tissue turgor and atrophy natural to a 60- or 70-year-old individual. In this case, the laryngologist must be prepared to discuss the sensitive issue of retiring or limiting a vocal career.

Taking a medical history is an exercise in detail. The laryngologist must relate respiratory or other illnesses that may have preceded or may be associated with the vocal problem, including asthma, emphysema, and chronic bronchitis; diabetes; endocrine disorders; stress-related disorders; and puberty, menopause, and menstrual cycle changes. The history taking should be very careful regarding dietary factors, taking into consideration food fads, recent weight gain or loss, preference for spicy foods, and so forth.

An environmental history is also extremely important. A major factor is travel. Did the patient recently arrive in the city in which the history is being taken? Does the area differ in altitude or dryness from the patient's resident city? Has there been a recent long flight resulting in time changes?

Does the patient smoke cigarettes or pipes even occasionally? Is the patient exposed to a smoky atmosphere at work or at home? Does the patient use or abuse drugs or alcohol?

With a patient exhibiting poor or detrimental vocal habits, family history may provide some insightful information. There may be a deaf person at home to whom the patient has

the habit of shouting, a close relative may have a vocal "quirk", the family may relate to one another by yelling or shouting, or there may be a familial vocal or speech pattern, such as whining or high-pitched tone, that has led to inappropriate use of the voice.

It is common sense to include a history of the ear, nose, and throat, including vocal fold surgery, noting particularly nodular or polyp surgery, and the method (ie, scalpel or laser) and extent. However, the surgical history must also include any portion of the body, particularly abdominal and thoracic surgery, because, as was mentioned earlier and will be repeated, the condition of the entire body affects the patient's vocal production.

Physical Examination

The physical examination of a patient with vocal complaints must include a complete ear, nose, and throat examination to ensure that there is no gross pathologic condition and because all of these functions are involved. Also a rapid gross check of the cranial nerves and the eyes should be performed, particularly the conjunctival area, to check for chronic irritation.

If there is even a slight suspicion of hearing difficulty, a hearing examination must be performed. In the case of hearing loss, there is a distinct danger of an alteration in the patient's perception of vocal production. A sensorineural hearing loss can cause voice production problems related to pitch, tone, and volume, whereas a patient with a conductive hearing loss may produce sounds that are louder than he or she perceives.

Nasal examination is essential in order to rule out swelling and congestion or pus associated with an irritative phenomenon (ie, swelling and redness of the nasal mucosa). Nasal examination should also check for significant deviation of the nasal septum, which may be obstructing the speaking voice. Deviation of the nasal septum is less significant in the singing voice unless it is associated with infection on the deviated side, which suggests that there may be sinusitis that is part of a chronic, long-standing problem. Of course, suggestion of an allergy based on the pale mucosa typical of this phenomenon should lead to further evaluation of the allergic manifestation, which may be localized in the nose as well as in the laryngeal and pulmonary areas.

During throat examination, it should be noted whether there is any pathologic condition secondary to tonsillar removal as well as evidence of obstruction, which can sometimes be so gross as to interfere with vocal production. Tonsillar removal may have included the uvula and the pillars, the loss of which may cause scarification that results in an inability to raise the soft palate properly, causing serious vocal production problems. A bifid uvula will also cause weakness in the lifting motion of the soft palate and an increase in the actual size of the nasopharyngeal cavity.

The nasopharynx must be examined completely to see whether there is an obstruction secondary to an adenoid, Thornwaldt's cyst, or other hyperplastic tissue. The nasopharynx is subject to chronic infection, and in the case of postnasal drip the infection may become localized. Dry, crusted matter in the nasopharynx contributes to both nasal discharge and irritation, which may progress to the vocal fold area.

During examination of the oral cavity, the position of the bite must be checked because it is a factor that may cause difficulty or pain when opening the mouth and tenderness in the temporomandibular joint. One must also look for gaps in the teeth that may cause disproportionate pressure upon one joint or another.

The tongue must be examined, looking for glossitis irritation or lingual tonsillar enlargement, which may interfere with the airway.

Also, during oral examination, the articulatory process should be observed. The patient should be asked to go through the motions of the lips - smile, frown, and so forth. Also the base of the tongue should be examined for lingual-tonsillar tissue tumors or cysts.

In laryngeal examination, the larynx as well as the lower oropharynx should be included, and also the pyriform sinuses and the base of the tongue, checking for lingual enlargement and large cysts in the vallecula. A floppy or bifid epiglottis and irritation or swelling of the epiglottis secondary to pharyngitis should also be looked for, as they may interfere with vocal function.

The posterior laryngeal structure should be evaluated because reflux esophagitis reflects itself in edema posteriorly and sometimes may even affect the vocal folds, which may still move well yet have the characteristic bulbous swelling that occurs with a reflux of acids from the stomach.

Examining Instrumentation

A mirror should be used in all examinations of the larynx and the pharynx to accurately see the color of the vocal folds, to see the ventricle satisfactorily and to comparatively measure its two sides as phonation of "E" is produced. Also, a mirror should be used to evaluate the balance in the position of the ventricular structure and to check whether the anterior portions are particularly bulbous, as may be suggested in a hyperfunctional vocal disorder. Use of a mirror allows the physician to grossly ascertain the motion of the vocal cords, a function that must not be overlooked when checking the larynx. Other instrumentation may occasionally cause positional apparition, which can be double-checked with a mirror. If the patient is a singer, he or she should be asked not only to say "E" but also to sing "E". A good singer will even be able to sing a scale, allowing the physician to see the balance of the vocal fold effort during production of sound.

To perform a really thorough laryngeal examination, the physician must be able to see the entire anterior commissure. Sometimes it is necessary to use a rigid fiberscope to see the anterior commissure adequately. It is easily visualized by a fixed fiberoptic instrument, and illumination is satisfactory. A mirror examination allows approximately 80 per cent of the larynx to be visualized; with a rigid fiberscope, it is possible to see as much as 98 per cent of the larynx. Both instruments allow accurate assessment of the coloration of the laryngeal structure. In those rare instances in which the larynx is not visualized adequately by these instruments, a flexible fiberscope should be used. However, it must be borne in mind that there will be a variance from the norm in the color of the laryngeal structures because the lighting is often inadequate, producing an irritated appearance.

Because use of the flexible fiberscope does not require pulling the patient's tongue, the physician can best ascertain the true laryngeal function in the sense of vocal fold motion during phonatory effort, which the patient cannot perform when the tongue is being pulled. In addition, the flexible fiberscope is extremely valuable for looking at the nasopharynx and for thoroughly examining the nasal vault.

If an examination is performed within a few hours of a singing performance, one should not use any sprays that will numb or desensitize the vocal folds, altering the quality of vocal production. If a laryngeal evaluation is done sensitively, it can be performed without the use of sprays that alter the sensory perception essential to proper vocal usage.

A stroboscope enhances the accuracy of flexible and rigid fiberscopes. The use of stroboscopy during examination is easy and the improvement in illumination allows accurate observation of how the mucosal wave of the vocal fold performs and whether there is unexpected gapping during an attempted approximation of the vocal folds during phonation. A lack of mucosal fold motion may indicate that there are some submucosal abnormalities or even mucosal abnormalities, such as scarring, tumors, or localized edema secondary to abuse.

Flexible fiberscope allow observation of the mucosal waves during stroboscopic analysis, since there is no pulling of the patient's tongue (mentioned earlier), whereas the rigid fiberscope requires tongue pulling, which interferes with a complete evaluation. However, the rigid fiberscope allows a much better view and a more minute examination of the mucosa itself. When the image viewed by a flexible or rigid fiberscope with stroboscopy is projected onto a television screen, the image is magnified to a degree that affords greater sensitivity in evaluation. The use of fiberoptic instrumentation also allows photographic recording of the image. The photographs can be kept as records, and copies can be sent to referring physicians, which can be a great asset because many vocal artists and actors travel frequently and may have more than one treating physician.

No examination is complete without making a sound recording. The recording can be of a gross nature, made with a simple cassette tape recorder, or it can be of a quality high enough for an acoustic evaluation of the sound itself. Obviously, this is not an invasive technique, it does not interfere with the patient's sensory mechanism, and it is valuable for record keeping and evaluation. An acoustic analysis determines the ratio of harmonic sound to the noise sounds produced, detecting vocal harshness; it can then be further evaluated by computer. This technique also reveals harshness that is caused by air escape. These studies allow a more critical vocal analysis, which is desirable when examining a vocal professional.

Laboratory Analyses

An acoustic laboratory analysis can be performed to various degrees, depending upon the sophistication of the available instrumentation, as well as on environmental noise control. The laboratory analysis should include an air flow determination, which measures waste or deficiency in the use of air necessary for vocal production. Excessive air flow may stem from a gap caused by physiologic malfunction or a gap caused by scarring that does not allow close approximation of the vocal folds. Inadequate air flow may indicate a tumor that has resulted in tissue that does not move properly, or it may indicate inflammation.

Hyperfunctional disorders are often marked by a lesser amount of air processed through the laryngeal structure. The measure of air flow will be used as a point of reference for improvement during therapy. In instances of disfluency, such as spasmodic dysphonia, gross functions are normal regarding air flow, except for periodic construction.

No matter how sophisticated the equipment available in laboratory analysis, the evaluation must start by *listening* during phonatory effort (a singer is asked to sing, an actor or speaker is asked to speak) without using any instruments.

Whenever there is a question about the efficiency of the expiratory force in vocal production, a pulmonary examination is performed to check for bronchial constriction or a decrease in functional ability, or both. Asthma appears in as many as five per cent of the singers examined (especially lyric sopranos). Other pulmonary functional disorders, such as emphysema, are less likely. However, any doubt should be dispelled by ordering a chest examination or chest x-ray film, or both.

Other laboratory studies that may be clinically helpful are electroglottography and phonation time. An estimate of phonation time can be determined during an office examination simply by using the second hand of a watch. This analysis can be part of the acoustic evaluation discussed earlier.

Electroglottography helps to determine the efficiency of the closure function of the vocal folds. The sound wave image can be displayed on a computer and printed out. This is an excellent laboratory tool both for the record and for teaching the professional voice user by biofeedback.

Electromyography is an invasive procedure and its use should be limited to a critical care environment. However, it is especially useful in determining an inefficiency in neural function of one or both vocal folds.

The Total Picture

Developing a total picture cannot be overstressed. A holistic approach is mandatory when investigating the history of, and performing a physical examination on, a patient who uses his or her voice professionally. The vocal production apparatus cannot be separated from the total person. A fault in posture can affect the position of the thorax in relation to the supporting musculature needed for proper relaxed expiratory effort. A patient's pale coloring may indicate anemia (not a rare problem), and a flushed appearance certainly warrants further investigation. One should be aware of the patient's fingernails (a clue to pulmonary malfunction), tremor of the hands, facial edema, periorbital edema, and so forth. Suspicion of a neurologic disorder may call for reflex studies and cranial nerve investigation. The gag reflex should be looked for. Is it present? If not, why? When there is any question at all, the chest should be examined: one must listen to the pulmonary system for any wheeze, and the heart beat and pulse must be checked. One must listen to the patient speak as he or she describes the complaint, or the patient should be asked to sing to illustrate the problem.

The laryngologist must be organized; a questionnaire is useful (see Appendices). It is a means of keeping a coordinated history mechanism and will bring out questions that may

otherwise be neglected, leading to a complete understanding of the patient's complaint and its cause.

Common Problems Encountered in the Vocal Professional

Stress and Anxiety

Stress and anxiety factors weigh extremely heavily on the actor's, singer's, and public speaker's ability to perform vocally, particularly the stress directly related to stage fright.

Brantigan and co-workers (1982) and others have performed investigative research and written extensively on the use of medication, particularly the beta-blocker propranolol (Inderal). There is no question that it is an effective medication for the extreme short-term anxiety related to performance. It slows heart rate and enhances the performer's ability to handle a stressful situation. However, there are significant drawbacks to the use of propranolol. First, it suppresses anxiety to the extent that it bypasses the state of heightened excitement necessary in creating the extra fine edge essential for a good performance. Instead, it can plunge the performer into emotional catalepsy. Propranolol banishes stage fright *and* dramatic excitement, resulting in a rather dull affair.

A beta-blocker can be used when there is a specific incident or a situation in which a fright has a *temporary* logical cause, such as the first performance after laryngeal surgery. In this instance, the patient may experience feelings of fearful insecurity in relation to such a situation. Another temporary instance appropriate to the use of a beta-blocker is a stressful family or career crisis that can eventually be resolved.

Many performers, including some of the greatest singers, learn to use the emotional aspects of stage fright for a heightened performance. Fear may be so great before a performance that the performer exhibits various types of hysteric behavior. However, he or she learns to suppress hysteria to a level of healthy fearful excitement through proper training, warm-up exercises and, of course, very adequate preparation before the actual performance.

In cases of chronic, overwhelming stage fright, the physician must stress the need for proper training. These chronic situations are not appropriate to the use of propranolol; it is not an innocuous medication and must be used judiciously. Use of the drug may bring on an acute asthmatic attack in patients with allergies, and because it slows heart beat, withdrawal from long-term use of propranolol may result in arrhythmia. When taking the patient's history, one must note whether he or she is taking or has taken this medication.

Reflux Esophagitis

Symptoms of reflux esophagitis are hoarseness, chronic cough, and throat discomfort. Evidence of reflux esophagitis appears as a pale edema of the posterior laryngeal area, specifically in the arytenoid cartilage and posterior arytenoid cartilage areas. The edema is often slight and is not noted unless the physician looks for it. One should note whether the patient suffers from heartburn, belching, or other distress after eating and whether the patient detects an acid taste in the mouth during sleep or even is awakened by it. If suspicion of reflux esophagitis is high enough, one should perform an esophagram, a cine-esophagram, a

pH study by string test, a motility study or, the simplest method, trial therapy. In trial therapy, the patient is instructed to elevate the head of the bed, discontinue eating within 3 hours of going to sleep, and use antacids after major meals and before sleep. Also the patient is warned to avoid caffeine and highly spiced foods. If there is significant improvement, this is diagnostic by itself. In many cases, continuing this therapy is sufficient. Explaining the disorder and the therapeutic approach is extremely helpful to the patient, who will bear the responsibility of his or her own state of vocal health and comfort.

Vocal Overuse and Abuse

A problem common among all types of vocal professionals is abuse or overuse of the vocal mechanism. Abuse can result from misuse of the voice during a particular role. Too often an actor assumes that he can scream or change the pitch of his voice without proper training or good vocal coaching. The actor can get away with the abuse for a time, but it eventually catches up. Of course, there is the occasional abuse associated with off-stage events: screaming during a robbery or other fright or shouting during an argument or a sports event. Such abuses can result in hoarseness, edema, or a nodule, as already described, and, in extreme cases, vocal fold hemorrhage. There is no way to prepare for all eventualities, but, again, good training can anticipate many dangers of improper vocal use.

Overuse is a common hazard of political campaigning. An overworked speaker can suffer from localized swelling of the vocal fold or a more generalized swelling, including the entire underlip of the vocal fold itself. If the patient smokes, vocal overuse can result in a more permanently damaging polyp. The vocal limits beyond which overuse can occur vary according to the training of the individual.

The most common cause of overuse in an actor's or singer's voice is too much rehearsal. Too often a rehearsal is carried way beyond the normal ability of an individual to perform. The producer or director, who has a reputation and a bank account riding on opening night criticism, may schedule extra rehearsal time. The decision is short-sighted, or course, since the vocal overuse of the performer combined with opening night nerves can lead to vocal trauma and an understudy's big chance!

Environmental Factors

Air travel is probably the most deleterious environmental factor facing the modern performer or speaker. Fatigue is not the only effect to be associated with flight, although it is the most noticeable. More important and detrimental to the vocal professional is the fact that an airplane's humidity is measured at about 8 per cent in the usual flight, and the same air is recirculated. This air unavoidably contains irritants in the form of smoke or debris, or both, from the duct system. These irritants, combined with the dry atmosphere, create many problems that did not exist in the days of ocean and train travel. It is a modern phenomenon.

The scenario of the actor, singer, or speaker on tour can have harsh physical results: the booking agent schedules an appearance immediately after a flight and books too many performances too close in time and too distant in geography. This leads to extreme fatigue when the environmental aspect of plane travel itself is a problem.

Although air travel provides environmental health risks, locale can provide further risks. The high altitude of cities such as Denver, Mexico City, or Santa Fe combined with low humidity do not allow the mucous membrane to be properly lubricated. Add smog as an irritant, and even the healthiest vocal apparatus will rebel. The only therapy is an adequate period of adjustment and increased humidity. Advise the performer-patient to rest and to have access to a humidifier. In a pinch, sitting in the bathroom with a warm shower running can provide some relief. Many Las Vegas theaters provide microphones that create additional humidity locally. Drinking a low of water and avoiding alcohol and caffeine will help to rebalance the system.

Other environmental considerations include the size and acoustics of the concert hall, including playback from the back of the room and the ability to hear one's voice adequately when there is an excessively loud noise such as in a rock group. Rock performers use monitors to give adjustment levels because the sound is directed toward the audience and away from the performer.

In an outdoor auditorium, it is extremely difficult to judge appropriate vocal levels, since there is no acoustic reverberation, and it is impossible to predict extraneous noise.

A dinner theater or club may have a noisy environment that also contains heavy amounts of cigarette smoke. Unfortunately, it is difficult to have people stop smoking in this setting.

The Role of Voice Rest

Years ago, it was not uncommon for a physician to frequently prescribe voice rest for up to several months. This goes well beyond normal levels of torture and constitutes abuse. It is rarely necessary to use voice rest beyond 1 week. The exception is in the case of vocal cord hemorrhage that has persistent blood in the submucosal layer, which may occasionally require voice rest for up to 2 weeks.

Voice rest should be limited to situations in which there is significant edema secondary to abuse, a break in the mucous membrane associated with infection, a submucosal hemorrhage, or, more rarely, aggravation of a previously seen localized polyp. For the most part, these situations require up to 3 days of complete voice rest; that means communicating with pencil and paper, not whispering, because whispering is even more traumatic than speaking. Complete voice rest differs from restrictive voice use, which means using the voice only for required statements and no prolonged or loud vocal use. Restrictive voice use is recommended for postoperative laryngeal surgery.

Medication

Commonly Abused Medications

Indiscriminately use of over-the-counter medication or prescription-only medication that is obtained without medical supervision is common among vocal performers. Among the medications most commonly misused, aspiring is perhaps most frequently abused, even by people who are aspirin-sensitive. It is not as rare as would be assumed, since patient

ignorance and the availability of aspirin products can cause vocal cord hemorrhage in a person who uses his or her voice in a stressful situation. Female performers who are stressed and whose increased capillary fragility in relation to the immediate premenstrual and early menstrual cycle, combined with the use of aspirin, can cause prolongation and repetition of vocal cord hemorrhaging. In addition, aspirin can create edema (particularly if there is a sensitivity manifested as pulmonary and nasal congestion), polyps, and laryngeal edema.

Frequently, a performer will use anesthetic lozenges. Having cut the pain reflex, the performer can traumatize the vocal mechanism without being aware of the event until the damage is done.

Other commonly abused medications are propranolol (discussed earlier) and corticosteroids. The latter medication is frequently passed from one member of a cast to another or from one friend to another without the understanding that cortisone derivative, taken by an unknowing diabetic individual or used for a prolonged period, or both, can result in dangerous home and adrenal gland changes.

It is worth repeating here that propranolol is a medication that is used too promiscuously and that it is the physician's responsibility to caution the professional voice user that it is a prescription medication of significance, not a benign pill to be taken indiscriminately.

Decongestant nasal sprays are also used indiscriminately, which is associated with a rebound phenomenon, creating further nasal congestion. Rather than benefiting a patient, overuse of nasal sprays causes chronic nasal congestion that can lead to sinusitis and certainly a great deal of physiologic embarrassment.

Antibiotics

Since professionals travel a great deal, it is not unusual that they go to physicians who are unfamiliar with their medical and professional histories and who, in any case, are not specialists in this field of laryngology. Some patients may exert pressure on a physician to prescribe antibiotics. The patient may even collect a kit of antibiotics and medications from various physicians and friends who think they are being helpful when there is actually an inadequate reason for the use of such medication.

Antibiotics can cause reactions such as gastritis, oral moniliasis, vaginitis, and diarrhea. The continued use of antibiotics under such circumstances can be discomforting and perhaps even dangerous at times. For this reason, antibiotics should be used only to treat bacterial infection. The general rule is to prescribe antibiotics when there is an illness significant enough to warrant it. The medication should be prescribed in conjunction with the preparation of a bacterial culture to confirm the appropriate choice of antibiotic. The prescription should be given to the patient, providing lactobacillus supplementation in pill form or perhaps instructing the patient to eat yogurt to help prevent reaction. In the event that there is a history of vaginal problems, nystatin (Mycostatin) suppositories should be prescribed as well. If there is a history of an oral *Monilia* reaction, extreme caution must be used to prevent recurrence.

Antihistamines

Although antihistamines are extremely necessary in treating severe allergies, for instance hay fever, they are vastly overused and can cause problems in vocal production, whereas producing only limited benefits. Antihistamines have various drawbacks - they create sensorium depression, sleepiness being the primary one, and generally decrease levels of mental activity. The antihistamines that are less sleep-inducing are also less effective as medications. Another side effect that relates to vocal production is the thickening of mucous secretions. If a drying agent such as phenylephrine is used in combination with the antihistamines, the medication may cause intolerable drying and jittery behavior.

When prescribed antihistamines, one must always consider first whether the patient has to think clearly, be alert, and have his or her voice in optimal condition. The use of these medications is warranted only when there is severe congestion caused by allergy. Generally, combined medications are most problematic because they enhance the drying effect and thicken mucus.

Cortisone

In its various forms, cortisone given either by injection or by oral pill can save a performance; it can also be dangerous if continued. Long-term use of cortisone can lead to significant changes in the adrenal gland, bone structure, and fluid distribution of the body. Its limited use is acceptable for a patient who is in reasonable health but suffers from a reversible edema. Cortisone is the medication of choice in cases of vocal abuse with edema, in the postinflammatory stage in which there is still residual edema of the vocal folds, or if there is the likelihood of an allergy that has resulted in vocal fold edema. Cortisone is not used when there is hemorrhage, acute inflammation, or a break in the mucosal fold.

When prescribing pill form, this writer's choice is low-dosage prednisone (five tables of 5 mg), although many otolaryngologists use higher doses and some prefer to prescribe methylprednisolone (Medrol). As with any steroid, the same cautions apply. When writing a cortisone prescription, the physician must indicate the drug company, make the initial dose the maximal (five tables of 5 mg each), and decrease the dose slowly by 5-mg increments (25 mg to 20 mg to 15 mg and so on, decreasing to zero). Most frequently, each dosage level is prescribed for 2 or 3 days, depending upon the amount of edema noted, always decreasing to zero. If edema is slight, each dosage level is prescribed for 1 day only, again decreasing to zero. If there has been more prolonged allergic phenomena associated with a demanding situation, the dosage pattern is 5 mg on day 1, none on day 2, 5 mg on day 3, and stop.

Sleeping pills (barbiturates) frequently are used to help correct a sleep pattern; individual patterns varying considerably. A good general rule in prescribing barbiturates is the lowest dose with the least effect. It would be unwise, however, to give a patient barbiturates for the first time prior to a performance, because persistent grogginess may be experienced. Other than this simple caution, there is no difference in prescribing barbiturates for a professional voice user than for any other patient.

Medications that are used to increase or thin mucus flow, or both, often contain iodine or guaifenesin as the major ingredient. Pharmacologically it does seem that guaifenesin is the

safest and most efficient method of increasing mucus flow, as it is already available in tablet form and is even the basis for some over-the-counter cough medications. Potassium in drops has been used for many years with good results, but it is not effective as guaifenesin tablets.

Local Medications

Nasal medication must be used with caution. Nasal sprays that are adequate decongestants are potential rebound agents. Therefore, any effective nasal spray should be discontinued after a maximum of 3 days before it can create a dangerous rebound effect.

Corticoid nasal sprays, particularly beclomethasone, can be helpful in breaking up the rebound effect. In the case of a highly nasal membrane, a beclomethasone spray can be used alone or in conjunction with a chromolyn sodium type of nasal spray, increasing effectiveness; the chromolyn sodium spray is used first, then the beclomethasone. If there is any dryness of the mucosa associated with either, the medication is stopped.

If there is a gluelike mucus or a purulent secretion of the nasopharynx, using local saline wash is extremely effective. The patient is encouraged to use the nasal saline spray as often as needed as long as there is no cardiac contraindication to its use.

Voice patients often like to use over-the-counter throat lozenges. The physician should recommend that they use lozenges without medication. Any lozenge that is gelatinous without medication helps to lubricate the throat. On occasion, it may be necessary to encourage lubrication by use of artificial saliva, but this is rare. Anesthetic throat sprays are not used for voice problems; they should be reserved for cases of extreme throat pain, such as after a tonsillectomy. Otherwise, they serve as irritants.

All of the laryngeal sprays can cause dangerous reactions; oily glycerine sprays lead to lipid pneumonia and phenolated sprays are irritating. Too frequently, patients use beclomethasone throat spray, which can be immediately effective but has the potential for side effects, the major one being secondary moniliasis. The patient must be cautioned to wash the mouth thoroughly after using beclomethasone spray, although even with this precaution, a *Monilia* reaction may occur in as many as 5 per cent of patients. The danger of persistent laryngitis developing secondary to moniliasis can be more serious than the initial problem.

On rare occasions, a nasal decongestant can be used as a throat spray in order to get rid of an acute edema in a public speaker, but it must not be used by a singer.

Mists are occasionally useful, propylene glycol for one, to help thin the mucus and cut down edema.

Steam used to be recommended frequently, and it is still an effective therapy for acute dryness. The patients sits in the bathroom while running a warm shower; this is particularly soothing before a singing performance.

Infectious Disorders

There are various types of acute upper respiratory infection. Congestion, irritation, perhaps sneezing, and a feeling of malaise are symptomatic of the viral type of infection. In this acute phase, it is perfectly possible for a singer or actor to continue to work with the understanding that the performance will not be up to par. As long as there is no laryngeal involvement, the decision of whether to perform is between the performer and his or her agent.

When a viral upper respiratory infection develops further, exhibiting congestion that is associated with a febrile response and an increase in throat pain, the patient's ability to perform becomes questionable, particularly if the patient must sing.

The operatic or classical singer is in a field in which there is no forgiveness if even one note is not of optimal quality. Even though an excuse and apologies for illness may be announced before the performance, the critics' reviews are based on the quality as heard, and all the bravery in the world would not suffice to have the critic forego the opportunity to criticize. Still the decision to perform is up to the producer and the singer, although during an operatic performance, it cannot be guaranteed whether a decrease in vocal quality will occur gradually or abruptly.

Significant nasal congestion in an actor would obviate a performance unless help is given in the form of nasal decongestants. The nasal shrinkage resulting from administration of nasal decongestants is just temporary but will aid voice quality. If there is sneezing, one should prescribe a non-sleep producing nondrying antihistamine such as chlorpheniramine maleate (Chlor-Trimeton) or terfenadine (Seldane), which is less effective.

Laryngitis with obvious hoarseness and swelling of the vocal cords in a classical singer bars any performance. However, a speaker or actor can use a local nasal decongestant such as oxymetazoline hydrochloride (Afrin) or phenylephrine hydrochloride (Neo-Synephrine), breathing the spray through the mouth with bottle held erect; this can be repeated once or twice during a performance. Concomitant use of decongestant and antidrying agents, such as guaifenesin, can also be tried. This assumes that there is no temperature elevation suggestive of a more severe systemic illness.

The use of voice rest is reserved for cases exhibiting mucosal redness and swelling or mucosal break, or all of these. Antibiotics are used in the event that there is a temperature elevation of significant nature and there is suspicion that the illness is systemic and of a bacterial nature. Cortisone is not used in the inflammatory stage, although on rare occasion it can be used in combination with an antibiotic. Beclomethasone in oral sprays should be reserved only for acute situations, always with the precaution of washing the mouth thoroughly after use to prevent a fungal *Monilia* inflammatory reaction and possible long-term hoarseness.

Severe influenza accompanied by temperature elevation, malaise, and chills is an obvious acute illness that requires discouraging the speaker-singer-actor from public appearance or performance. It must be stressed to the patient that there is too much danger of secondary infection and that there is no possibility of giving an adequate performance; it

would be an unnecessary attempt at bravery.

In cases of prolonged inflammatory reactions involving bacterial nasopharyngitis, an obstruction may develop, leading to sinusitis. Only aggressive active therapy in the initial stages will prevent a chronic problem. An acute episode combined with air travels should be carefully monitored so that there will be less likelihood of sinusitis or otitis media of an inflammatory or serious nature developing secondary to the flight. The medication indicated is the same as previously discussed for sinusitis as well as when an inflammatory disorder progresses to the point of bronchitis or pneumonia, or both. Untreated, these illnesses can have severe consequences for the professional singer.

In all cases of upper respiratory infection, it is essential to lubricate the vocal mechanism, even if there are no demands on the patient's vocal use. Therapy for constant lubrication requires fluid intake, mucus thinning medication such as guaifenesin, and an increase in air moisture using an ultrasonic humidifier, steam, or a warm shower.

Performance is not the total goal. It is the general health of the performer and his or her future professional life that one has to consider first. The laryngologist must be the performer-patient's guide as to when not to perform, since he or she can recognize and warn against anything that is likely to lead to a long-term disability and to damage the vocal folds themselves. Because the good performer wants to perform, far too often he or she will make the attempt in spite of an upper respiratory infection of significant nature, even with laryngitis, resulting in a more permanent type of laryngeal disability such as nodules or early polyps. To increase the patient's cooperation regarding medical advice, the laryngologist works in concert with the patient's voice teacher. A team approach has a positive effect on the vocal professional, especially during periods of stress related to career management. One must always be reassuring yet direct in handling any situation.

Vocal Fold Polyps

A vocal cord polyp that is confined to the junction of the anterior middle third of the vocal fold, presumably secondary to some traumatic event such as hemorrhage that has been resorbed, appears as a subglottic polyp that extends up to the approximated edge of the vocal fold. In a large number of cases, this type of pathologic condition is persistent, is aggravated at times of stress, and is not readily reversible. Regardless of the fact that it is not readily reversible, voice therapy, whether for speech or singing, is indicated before any decision is made for surgical removal. Voice therapy should continue for at least 6 to 8 weeks. As with all vocal pathologic conditions, a recording should be made for comparison and study.

In the event of surgical removal of a small polyp (2 to 3 mm), the surgeon must be careful not to damage the submucosal area. Usually, a biopsy cut will remove the lesion completely, and it is not necessary to do anything with laser to the base. In the event of a larger lesion, the edge is incised using sharp dissection or laser and the incision is followed with aspiration, retaining sufficient mucosa to cover the denuded portion. Laser is not used to burn the base, as this will create additional scarification.

In discussion, the word polyp commonly also means a pseudopolyp, that is, bilateral polypoid degeneration of the edges of the vocal fold. This pathologic condition can reach an

extraordinary size - hence the name "elephant ear" - and can almost obstruct respiration. This condition generally appears in a patient who has been a smoker. It is essential for the patient to stop smoking. In rare instances, it can be caused by a metabolic disorder such as hypothyroidism. Surgical excision of the "elephant ear" is aimed at aspiration and saving the mucosa, which can be achieved by sharp dissection of the very edge and aspiration of the subglottic area. Frequently, the lower portion is excised just enough to allow aspiration of the contents unless a fibrinous change of the material makes it too difficult. In this case, a larger excision is required. Again, if laser is used, it is essential to limit dissection.

It is dangerous to excise bilateral lesions; it is far better to do only one side, saving a couple of millimeters anteriorly. This decision assumes that the patient will stop smoking and that he or she is warned that the other side may have to be excised at a future time. Frequently there is a spontaneous resolution of the edema so that it is unnecessary to do the second side. Also, the patient must ba warned that it takes at least 2 to 3 months for normal voice production. Although recovery is usually quicker, it is better to warn that it may take longer, particularly to a vocal professional. It is also essential to make vocal recordings, because polyp excision so interferes with vocal production that the physician protects himself or herself by keeping presurgical vocal recordings of a high quality to indicate that there is postoperative improvement, even if total normalcy is never achieved.

Vocal cord nodules are particularly an abuse phenomenon, first requiring an attempt to reverse the abuse by speaking or singing voice therapy. This is possible in the vast majority of cases unless the nodule is larger than 2 mm. Therapy continues for 6 to 8 weeks before a decision is made in favor of surgery. For the most part, vocal therapy alone will reverse the nodular formation to a satisfactory degree. For example, lyric sopranos sometimes exhibit edema that is diagnosed as nodular; 5 per cent of these patients have perfect voices regardless of this pathologic condition. In such cases, surgery most likely will cause scarification, further damaging voice quality. Any scarification that interferes with the mucosal wave motion is harmful rather than helpful to the voice.

If it is necessary to remove the nodule after a preliminary period of therapy, only the nodule should be removed and biopsied. Excision at the base will create scarification, further interfering with mucosal wave motion. Here again, an acoustic recording prior to surgery is essential as a reference point to measure improvement.

Hemorrhage

Vocal fold hemorrhage is a physical phenomenon of hemorrhage in the submucosal layer, causing extreme swelling and hoarseness, although occasionally it occurs without discernible hoarseness. This disorder is treated medically rather than surgically. With complete voice rest for 1 or 2 weeks, resorption is usually complete. However, there is a risk that resorption will leave a prominent vessel that can bleed if there is subsequent trauma to the vocal fold, which can occur during times of capillary fragility. Such fragility is evident on the day before and the first day of the menstrual cycle. Female patients should be warned to be particularly careful to avoid vocal stress during this time. If the condition is recurrent, a study should be performed of the patient's endocrine function, particularly the relationship of estrogen to progesterone.

In some rare cases, the vessel remains prominent, causing vocal quality aberration, particularly if the vessel is supracordal on the more anterior aspect of the vocal fold. If it is necessary to remove this prominent vessel, the ideal procedure is to use a laser, just touching the vessel along its length without disturbing any other mucosa. This procedure has been used a number of times with very satisfactory results. The ideal goal is to avoid scarification.

There is increased predilection to hemorrhage in a patient who is taking aspirin or any other anti-inflammatory medication. A carefully taken medical history reveals the medications used when the hemorrhage occurred. Vocal fold hemorrhage can also occur after an event involving abusive vocal use, for instance, unsupported shouting as in scream therapy, shouting at a sports event, or screaming from fright. Vocal instruction helps prepare the professional to have vocal control in many but not all traumatic circumstances.

Common Local Pathologic Conditions

Contact granuloma results from a local pathologic condition that leads to ulceration at the meeting point of the vocal processes. These granulomas can be very large, often as large as a lima bean. The medical temptation is to continually remove it. However, every time it is removed, it comes back even larger. The diagnosis of contact granuloma or ulceration, or both, made after careful examination and biopsy, calls for voice therapy related to voice pitch change. Also, because reflux esophagitis occurs in many such cases, an esophagram or test therapy is performed for reflux esophagitis, which involves elevating the head of the bed, taking antacids, and restricting food consumption as discussed earlier.

The majority of persons afflicted with contact ulcers and granulomas lead anxious, stressful lives; therapy should include relief of the stress if at all possible. Explaining the nature of the condition and offering reassurance to the patient contributes to stress reduction.

Systemic Disorders

A primary concern in therapy of a diabetic patient is the likelihood of recurrent infection. Pharyngitis more frequently follows an irritative pattern; therefore, it is essential to control diabetes not only from the standpoint of the patient's general well being but more specifically for care of the voice.

Some rare cases of adrenal insufficiency involve myasthenia, which can lead to slowing of or interference with small muscle action. Diagnostic testing for myasthenia, either in the gravis form or secondary to adrenal insufficiency, is essential in the care of individuals with hoarseness. Therapy is not in the scope of this text but is adequately available.

Hormonal Changes

The whole series of menopausal changes as they occur can lead to dryness of the mucosa and thinning of the supporting mechanisms of the vocal folds, including the musculature. This can lead to vocal fatigue and vocal fold bowing, requiring the professional voice user to compensate. Increased awareness, continued training, and possible adjustment of the vocal range are therapeutic. This is a problem of both men and women who are undergoing the hormonal changes attendant on aging.

Change of voice in puberty is an obvious phenomenon, requiring the adolescent boy to be carefully guided through his pubescent period in order to achieve the ideal vocal range. A voice teacher is a crucial factor in the professional life of the individual.

Thyroid Function

A sluggish individual who is easily fatigued, has dry skin, and exhibits vocal changes secondary to slight thickening of the vocal fold is not commonly seen among vocal patients. However, these symptoms may indicate a hypothyroid condition, which requires appropriate therapy. Hyperthyroid conditions are even more rare, as are cases of multiple sclerosis or parkinsonian disorders and are, therefore, not in the purview of this text.

General Surgery

General surgery, particularly in the abdominal and pelvic areas of female patients, is likely to cause vocal problems if an attempt to perform is made to early. This is most evident in cases in which muscular damage secondary to surgery interferes with the expiratory force needed for vocal production. For this reason, the patient requires an adequate rehabilitation period to allow the muscles that have been cut to strengthen before returning to full function. This may take 2 or 3 months, depending upon the severity of the procedure.

Because the extremities are related to the postural mechanism, surgery involving the extremities can affect vocal production. Again, rehabilitation is necessary before the patient resumes active performance.

Chest surgery obviously interferes with the thorax and may require an even longer period of rehabilitation.

Surgery of the neck area, particularly on the thyroid gland when the strap muscles are interfered with or even cut, may cause the patient's inability to manipulate movement of the larynx. The thyroid gland surgeon should be aware that the patient is a professional voice user and should try by all means possible to save the strap muscles. This is also true of parathyroid gland surgery, neck surgery involving the major vessels such as the carotid artery, or surgery of the anterior portion of the spine for a disc procedure. In general, any neck surgery is likely to affect laryngeal function by interfering with strap muscle action upon the larynx and other muscle structures as well by causing structural rigidity through scarification. If surgery involves the recurrent or superior laryngeal nerves, the effect upon the voice is gross. Although in some seemingly miraculous cases, a singer with a complete paralyzed cord will go on to a classical career, more frequently the air escape and fatigue associated with this type of surgery do not allow the level of vocal production necessary in the professional world.

Indications for tonsillar surgery in the vocal professional are the same as for any patient undergoing this surgery. Only rarely does the patient's profession become a factor in deciding on tonsillar surgery.

Removal of the tonsils should be considered if an extremely large tonsil obstructs the airway passage, if the repetition of infection may jeopardize the patient's career, or if the tonsils are of a size and in such a position that they interfere with soft palate action. However,

a grossly large tonsil is more often a problem for the speaking voice rather than for the singing voice.

One must always consider the dangers of tonsillar surgery in relation to the voice. Some common drawbacks and considerations follow: extensive resection of the soft palate can cause a hollowness of tone; interference in soft palate action by excessive or keloid scarring can result in a complete inability to use the voice properly; and leaving the adenoids intact during tonsillectomy is an infrequently appropriate procedure that may change the voice.

Nasal surgery for the septum has been frequently advised for improvement of the voice. This is not true in all cases. There is usually no reason for surgery of the nasal septum other than the criteria used for any other patient. Surgery should be seriously considered if the nasal septum interferes with drainage and is related to recurrent or chronic sinusitis. An airway problem that is significant for the nonprofessional is an airway problem for the professional as well. However, it is extremely rare that a singer's voice is at all improved by surgery on the nasal septum. It is more likely that a speaking voice can benefit from straightening the septum.

Surgery for cleft palate and for the temporomandibular joint is very selective. A person will generally have had correction of a cleft palate in which there is a nasopharyngeal air passage before pursuing a vocal career. However, it may be necessary on rare occasion to use a pharyngeal flap.

It is necessary to have freedom of action of the temporomandibular joint, particularly as one tries to be in the professional singing world. However, it is rarely necessary to resort to surgery to enhance vocal production or quality. The temporomandibular joint action is frequently corrected in dental therapy by use of a bite plate, which resolves the pain and allows freer action.

Discussion

It is not always easy to persuade the patient to put immediate professional considerations on the back burner while health considerations take precedence. Under pressure, it can be a temptation to provide a "quick fix" so that the patient can pursue his or her urgent career goals.

To provide optimal care and fulfill the role as a member of the vocal professional's team, the laryngologist must be thoroughly knowledgeable of and sensitive to his or her patient's physical and emotional makeup as well as sympathetic to that patient's career goals. Eliciting support from the patient's teacher will increase the patient's trust.

Finally, the patient's well being is keyed not only to his or her physical health but also to the emotional health and life style, which include exercise levels and nutritional awareness. In these respects, the laryngologist can be a teacher and guide. The result of such precise care is optimal maintenance of vocal quality during the patient's professional life.

Appendix A. Voice History Profile: Patients with Voice Problems

Name _____
Sex ____ Height ____ Weight ____ Age ____

1. What is your present voice problem?
2. Have you had pervious problems? If so what have they been?
3. How long have you had the present problem?
4. Is the present problem getting better or worse?
5. Describe the onset. When did you first note it? Is it getting better or worse? Was it sudden in its onset or gradual?
6. What are your specific vocal symptoms?
   Loss of range?
   Hoarseness?
   Problem with volume control?
   Throat pain or other discomfort?
   Excess fatigue?
7. Have you had vocal training? If so, with whom and where?
8. What are your current speech demands? Do you have to use your voice in the public setting in the near future? Have you abused your voice recently in preparation?
9. What type of formal vocal activity do you engage in?
10. Do you use the telephone extensively? Do you use a speaker type of telephone?
11. Have you seen a laryngologist before? If so who and where?
12. Have you had any previous surgery? If so, what was the surgery and when was it done?
13. Do you take any medicines? If so, what are the medications and the dosages?
14. Do you have any allergies? If so, what are the allergies? Have you been tested by an allergist? What was the method of testing?
15. Do you smoke? If so, what and how much do you smoke? If you stopped, how long ago was that?
16. Do you drink alcoholic beverages? If so, what are they? How much?
17. Do you drink coffee or tea? If so, what and how much?
18. Do you or have you used any drugs such as marijuana, cocaine, and so on? If so, when, what, and how much?
19. Have you had any emotional problems that were treated by a psychologist or psychiatrist? If so, when? Please relate this verbally and we will discuss it.
20. Are there any other health problems that are pertinent? If so, please relate them now or in your history as we continue the evaluation. This would more specifically refer to disorders of a metabolic nature or those that involve menstruation.

The material covered is only to help as a reminder. It is not to be thought of as a complete evaluation. Please bear this in mind as we then repeat and clarify various points in a verbal review.

Appendix B. Voice History Profile: Singers

Name _____
Sex ____ Height ____ Weight ____ Age ____

1. What is your present voice problem?
2. Have you had pervious problems? If so what have they been?
3. How long have you had the present problem?
4. Is the present problem getting better or worse?
5. Describe the onset. When did you first note it? Is it getting better or worse? Was it sudden in its onset or gradual?
6. What are your specific vocal symptoms?
   Loss of range?
   Hoarseness?
   Problem with volume control?
   Throat pain or other discomfort?
   Excess fatigue?
7. What has been your training and with whom have you studied? How long have you studied?
8. When is your next performance? Is this a rehearsal period? What type of role do you have?
9. What type of singer are you? What is your range? Are you a professional or amateur.
10. Have you had any problems with your speaking voice? If so, what were the major problems?
11. Have you seen a laryngologist before? If so who and where?
12. Have you had any previous surgery? If so, what was the surgery and when was it done?
13. Do you take any medicines? If so, what are the medications and the dosages?
14. Do you have any allergies? If so, what are the allergies? Have you been tested by an allergist? What was the method of testing?
15. Do you smoke? If so, what and how much do you smoke? If you stopped, how long ago was that?
16. Do you drink alcoholic beverages? If so, what are they? How much?
17. Do you drink coffee or tea? If so, what and how much?
18. Do you or have you used any drugs such as marijuana, cocaine, and so on? If so, when, what, and how much?
19. Have you had any emotional problems that were treated by a psychologist or psychiatrist? If so, when? Please relate this verbally and we will discuss it.
20. Are there any other health problems that are pertinent? If so, please relate them now or in your history as we continue the evaluation. This would more specifically refer to disorders of a metabolic nature or those that involve menstruation.

The material covered is only to help as a reminder. It is not to be thought of as a complete evaluation. Please bear this in mind as we then repeat and clarify various points in a verbal review.

Appendix C. Voice History Profile: Actors

Name _____
Sex ____ Height ____ Weight ____ Age ____

1. What is your present voice problem?
2. Have you had pervious problems? If so what have they been?
3. How long have you had the present problem?
4. Is the present problem getting better or worse?
5. Describe the onset. When did you first note it? Is it getting better or worse? Was it sudden in its onset or gradual?
6. What are your specific vocal symptoms?
   Loss of range?
   Hoarseness?
   Problem with volume control?
   Throat pain or other discomfort?
   Excess fatigue?
7. What has been your training and with whom have you studied? How long have you studied?
8. When is your next performance? Is this a rehearsal period? What type of role do you have?
9. What type of acting do you do? Dramatic, comedy, musical comedy? Do you act professionally or in amateur groups?
10. Have you had any problems with your speaking voice? If so, what were the major problems?
11. Have you seen a laryngologist before? If so who and where?
12. Have you had any previous surgery? If so, what was the surgery and when was it done?
13. Do you take any medicines? If so, what are the medications and the dosages?
14. Do you have any allergies? If so, what are the allergies? Have you been tested by an allergist? What was the method of testing?
15. Do you smoke? If so, what and how much do you smoke? If you stopped, how long ago was that?
16. Do you drink alcoholic beverages? If so, what are they? How much?
17. Do you drink coffee or tea? If so, what and how much?
18. Do you or have you used any drugs such as marijuana, cocaine, and so on? If so, when, what, and how much?
19. Have you had any emotional problems that were treated by a psychologist or psychiatrist? If so, when? Please relate this verbally and we will discuss it.
20. Are there any other health problems that are pertinent? If so, please relate them now or in your history as we continue the evaluation. This would more specifically refer to disorders of a metabolic nature or those that involve menstruation.

The material covered is only to help as a reminder. It is not to be thought of as a complete evaluation. Please bear this in mind as we then repeat and clarify various points in a verbal review.