Study on the Application of Electronic Equipment in Voice Disease Prevention

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Abstract. Electronic auxiliary equipment in many fields have been used in the prevention of disease, the vocal voice is more and more widely used, in the daily vocal training and voice disorders are mostly because the pronunciation method caused by improper, therefore, prevention and treatment of voice diseases is the scientific sound, let the human body the vocal organs reasonable movement in the vocal motor; followed by active prevention, effective treatment and daily life care. "Sound" is just like his life for the singer. How to protect it, keep it, and make it shine forever is the dream of every singer. In this paper, the application of electronic equipment, the use of voice disease prevention, through the scientific method of voice, physical health, diet and other aspects of the use of electronic auxiliary equipment, discusses the protection of artistic voice, singing can find the correct way of voice health.

1. The Important Role of Voice Disease Prevention

1.1. Voice Disease Prevention is Good for Maintaining Good Breathing

The physical vibration wave. Vocal production is no exception, but also because of the breath of vibration, vibration throat vocal cords and sound. So far, the vibration of the vocal sound Public opinions are divergent. theory, unable to agree on which is right. One point of view is that the subglottic pressure reaches a certain level. When the glottis is closed, the air is blown out and the air sounds out. This view is called the theory of muscular elasticity by voice medicine, also known as aerodynamic theory. There is also a view that vocal cord vibration is controlled by the brain, controlled by the nerve, is the brain recurrent laryngeal nerve, rhythmic rhythmic impulses, so that the vocal cord vibration. Voice medicine says this theory is the theory of neural duration. Most scholars believe that the neutralization of the two principles produces the human voice, that is, under the control of the innervation of the human brain, the sound source of the vocal cord is affected by the force of the breath of the lungs. Based on this understanding, then scientific sound is under the control of positive thinking, good breathing support the human voice action. As early as the Tang Dynasty, our ancestors realized that breath played an important role in the process of human voice. An Duan Tang festival in "Yuefu miscellany" said: "good singer, must adjust the gas." In addition to the essence of ancient wise judgment, today there are a lot of fresh experience. China's famous performing artist Mr. Cheng Yanqiu said: "the air feel void by the pubic region, head, waist, shoulders relaxed two." A comprehensive overview of the parts, status, sensations, and methods of singing breathing movements is given. China's vocal music educator Tang Xuegeng said: "the so-called Dantian gas, is the use of isolation (i.e. diaphragmatic breathing) manipulation." These claims are similar to the breathing requirements in western traditional singing. In 1893, the French Academy of music published "notes
on singing methods"): "when singing, the belly should contract when breathing. This is the opposite of the general breathing and breathing, and the upper abdomen is slightly bulging." The famous German singer Nelly Lehmann, summed up his decades of experience singing said: "when I put the inspiratory abdomen and diaphragmatic indentation, chest with ribs to keep breath." Overview of excellent art of singing, all good pronunciation, the breathing problems are through abdominal pressure (abdominal muscle contraction force), on intra-abdominal organ thrust force will be the role of bottom-up conduction to the diaphragm, making it to the bottom of lung, the power storage formed to support voice in the air the lungs a gas pipe. Due to the movement of the diaphragm and tension, outward expansion of the support under the wings rib, such breathing state, breathing air in vocal organs time, easy to produce "berneli acoustic effect", the coordination between the appropriate sub vocal cords, throat, trachea and vocal organs of muscle and cartilage action, to breath smooth, smooth, mellow sound rich, such as freely flowing style of writing, like connecting beads, move among force and soft has flexibility, expressive[1].

1.2. Prevention of Voice Disorders Can Produce Beautiful Sounds
To make a good sound, you must have a good voice, and in the daily life, to prevent sound illness, you can guarantee the singer can make beautiful sounds. Each person's voice conditions are not the same, strength, width, tone sound intensity are different, should be based on sound characteristics, personal abilities, the person. The start of training time should not be too long, not too wide range, sound intensity is not too strong, don't sing too much, too difficult to work, to sing soft and coherent melody, in order to achieve flexible laryngeal muscle action and steady breath control, and the coordination of action, to do flexible vocal exercises in natural sound in the region, according to the requirements of training, training to overcome the blindness in sound, emphasize the consciousness, don't expect the short term to improve the ability of sound, and we must focus on the gradual adjustment of vocal skill internal coordination. The vocal function of the human body is closely related to hearing. Beginners must pay attention to aural training and establish the correct sound concept in auditory memory, which is the basis of human voice training[2].

2. Commonly Used Voice Disease Prevention Methods

2.1. Exercise Actively
The glottis is a small physiological organ in the human body. The health condition of the whole body influences the voice directly [3]. Therefore, we should pay attention to exercise and improve the ability of preventing disease and disease. Choose proper sports according to your body condition, such as walking, playing ball, swimming, skating and so on. Sports and voice training should not be too close to prevent fatigue caused by congestion of the vocal cords. Exercise should be step-by-step, step by step, persevere, but also pay attention to protection at any time, can not be careless, in the case of maintaining a healthy voice, steadily and steadily improve the ability to sing pronunciation[4].

2.2. Perform Positive Recovery after Singing
There are three methods for the treatment of voice diseases, that is, local treatment, systemic regulation and vocal therapy. Specific practices are as follows:
(1) no sound. For acute inflammation, edema and other diseases should be banned sound rest treatment. In addition to the normal treatment of chronic inflammation, due to the arrangement of vocalization and silence to rest. Due to functional disease or psychogenic voice disorder disease with sound based correction. After the operation of the throat, the time should not be too long. According to the recovery after the operation, under the guidance of the doctor, the voice exercises are performed slowly, so that it is very beneficial to the recovery of the throat structure and function. According to voice, can be taken: A. absolute silence; a small amount of B. C (note softly; speech time control); D. natural sound area vocal exercises; E singing (note that the control time, sound intensity) of different degrees of gag practice. In the process of voice rest, some people think that "whisper" is a good
method, which is a wrong understanding. In the whisper, the larynx muscles do not get a rest, and the vocal cords are closed, which hinders the restoration of the normal vocal function. (2) drug therapy. It is divided into two forms: internal and local points. Oral administration: for acute inflammation such as congestion, edema, secretion increase, internal or external injection of antibiotics, hormones and other anti-inflammatory and analgesic drugs. Local point: through the suction device, the drug directly suction throat lesions, to achieve anti-inflammatory, analgesic and moisturizing role, in addition, can also be applied to the affected area with intravenous drip and clothing. (3) surgical treatment. This is the throat with proliferative lesions of the treatment methods, such as: the treatment of vocal nodules, polyps and other diseases, can take this method. (4) Chinese medicine treatment. Including drugs, acupuncture, ear acupuncture, massage, qigong, etc. Drug treatment: according to different disease symptoms, follow the doctor's advice to take the pill, powder, decoction. Acupuncture: strengthens the meridian function by acupuncture, achieves the adjustment nerve, completes the treatment goal. Treatment of voice diseases common points are: sudden, Tianding, skylight, Renying, Lian Quan, gas house, water inrush etc. With acupuncture ShaoChang, Shao Chong, little Ze, Hegu etc.. Deficiency of Qi and blood, hypofunction of function and period of disease [5].

Chronic disease long with weak stimulation, acute disease of evil outside attack, hyperthyroidism, stage of disease process together with strong stimulation. Auricular acupuncture: Acupuncture ear acupuncture points to treat systemic diseases. Voice fatigue and inflammation take throat area, rhinitis take nasal region, insomnia take occipital area, subcortical region. Massage: using two hands on the body surface of the meridian points to push, take, rub, buckle, point, cut, quiver, knock, etc. massage action, the principle of acupuncture and acupuncture the same. Massage plays an important role in strengthening the function of organs and eliminating the fatigue of singing. Before singing, you can gently massage the springs, the sky, the people, the Zusanli, and so on, so as to achieve the purpose of stimulating excitement. Sing after recovery by heavy Hegu, ShaoChang, little Ze hole, to suppress the excitement, sedative. Qigon therapy in China: some Qigong boxing, in the aerodynamic condition and singing breathing requirements have many similarities, the vocal music work to learn Qigong, be of great advantage, have a positive effect on the recovery of fatigue and treatment of voice diseases. (5) physical therapy. Through medical devices, the use of physical factors, such as electricity, light, wax, water, sand, mud and other functions on the body surface, or diseased parts, to promote humoral response, the mobilization of nerve function, to achieve the purpose of disease prevention and treatment.

2.3. Pay Attention to Health Care in Daily Life
Life care is an important measure for prevention of voice diseases, it is to extend the life of art, enhanced voice ability are closely related, China's famous Peking Opera artist Mr. Mei Lan fang has accumulated rich experience in the protection of the throat, throat using hand. He said: "the spirit of fun, ataractics, diet, living in cold and warm care, and uniform practice voice Paul voice, thank you all, from low rise, their fifth full, sing the story." Absorbing the experience of our forefathers, we sum up the following problems: to protect the voice in life, we need to pay attention to the following aspects. First. To have a healthy physique and physique. Physical health is the material basis of singing, have strong body will have a loud voice, so vocal workers usually have to pay attention to physical exercise, in order to ensure healthy people. In addition, the function of the body play a role by psychological factors about people, the person's mood affects voice through sympathetic mood, sympathetic nerve, has a positive effect on the fatigue elimination of the throat instead, depression can cause voice fatigue. Therefore, vocal music workers should pay more attention to the exercise of personal psychological awareness, pay attention to the cultivation of morality and conduct, and constantly improve the level of cultural knowledge, create a perfect spiritual world, and develop a healthy spiritual temperament. Second. Prevent colds Colds and flu are common diseases, and the incidence is very high among vocal music workers. In addition to regular physical exercise, we should also pay attention to environmental sanitation. Eliminate the source of infection and prevent colds. Changes in temperature, pay attention to change clothes, sweat on the body, be careful not to catch cold by the wind. Third. Life must be
regular. The work, the rest, the diet, the sleep in life must be orderly. Form regular habits and habits. Sings every time, not be interrupted, according to voice the ability to gradually increase the singing time, and quite, singing is not excessive, the rest should be reasonable. The principle is not only to ensure the sound of the voice, but also to get the necessary exercise. Diet should be quantitative timing, before singing can not eat too full, so as not to affect the movement of the diaphragm. Sleep restores the tired body and makes the working song rest, so it's important for the singer to get plenty of sleep.

Fourth. Pay attention to dietetic hygiene. Don't be greedy for alcohol or smoking, and should pay attention to the choice of stimulating food. Cold hot drinks, hot pepper, mustard, raw onions, raw garlic, greasy food great stimulation to the throat mucosa, promote the secretion, sound is not smooth, the sound is not clean, as there is always the feeling of throat phlegm. These foods are selected according to the individual's adaptation, less or no need. Five. Voice protection. The sound is a sound change in human development reflects changing during the throat hyperemia, edema, exudation, glottal incompetence, dysphonia. It should reduce the use of the voice activity, pay attention to rest, since the late, according to individual circumstances can vocalize, but the breath intensity, sound intensity, width range should be strictly controlled.

3. Electronic Auxiliary Equipment in Voice Disease Prevention

3.1. Correct the Wrong Sounding Method Through the Electronic Auxiliary Equipment
Voice diseases caused by the wrong sounding method are the most common and the main cause of the disease. The error caused by vocal voice disorders, often by medical treatment does not work, only to complete the treatment by the doctor and vocal teacher can cooperate, which by the vocal music teacher correct vocal method is particularly important. The occurrence and development of things have objective laws, and so do singing. When singing, because the respiratory control and the sympathetic method are not correct, causes the vocal organ to be uncoordinated, causes the throat burden to be overweight, the muscle group function loses the balance, the sound organ can lose the normal work ability. Double burden of laryngeal muscle, can cause local congestion, laryngeal muscle fatigue, chronic throat disease can occur for a long time, which is the root cause of voice disorders. Therefore, through the electronic auxiliary equipment, for correcting the wrong voice, prevention of voice diseases have a better effect.

3.2. Use Electronic Equipment to Reduce Voice Abuse
A person's energy is limited, the movement ability of the vocal organs is limited, all overload of work, will make the brain and muscle fatigue, caused by the accumulation of lactic acid metabolites, so vocal exercise time should not be too long. Unrealistic pursuit of treble, voice, or arbitrary expansion of the vocal range is more difficult, their songs will make beyond strength and power, and vocal fatigue by excessive shock, which if not corrected, a long time can play mucosal hyperemia and edema, hypertrophy, sound with the summary of laryngeal diseases. Some beginners, as eager to learn, often in suffering from throat diseases still vocalize, voice abuse will aggravate the vocal cord edema, difficult to treatment, delay the disease, serious person can make the vocal submucosal hemorrhage, which caused The consequence is that electronic equipment is used to monitor the abuse of voice, so as to prevent voice diseases [6].

To learn vocal music, we must adhere to the principle of gradual progress, obey the guidance of teachers, cooperate closely with teachers and students, and play a sound “middle voice” area, then expand the vocal range. Sing songs that suit your abilities. The length of exercise should also be determined according to the specific conditions of the individual's physique and technical level. If you feel tired, you should rest immediately.

3.3. Through Electronic Assistive Devices for Scientific Sound Practice
All walks of life have their own basic skills, vocal music is no exception, the basic skills of vocal music is pronunciation exercises, teachers teach the correct pronunciation method, students should
adhere to practice every day. Scientific vocal methods can make the singing organs healthy and enhance their vocal ability, and play a positive role in the prevention of professional diseases in singing. If you can not adhere to scientific practice, singing level can not be improved. Some students feel that their sound conditions are good, mouth sound, do not have to practice every day, this idea is extremely wrong. When young, good physique, voice is very loud, but the conditions of talent can not take the place of scientific knowledge, superior gift bar.

4. Conclusions
Is it difficult to afford long-term, arduous task of singing, there is no scientific method, singing in the heavy pressure, it is easy to suffer from voice disorders, voice is also easy to prematurely senile, electronic auxiliary equipment for auxiliary singing voice, voice to prevent disease.

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