

Health Benefits of Singing: A Perspective from Traditional Chinese Medicine and Chi Kung ¹

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It is often said that singing is good for the soul, and many recent medical studies have shown that singing is good for the physical body as well. ² For example, Professor Graham Welch, Chair of Music Education at the Institute of Education, University of London, states:

The health benefits of singing are both physical and psychological. Singing has physical benefits because it is an aerobic activity that increases oxygenation in the blood stream and exercises major muscle groups in the upper body, even when sitting. Singing has psychological benefits because of its normally positive effect in reducing stress levels through the action of the endocrine system which is linked to our sense of emotional well-being. Psychological benefits are also evident when people sing together as well as alone because of the increased sense of community, belonging and shared endeavour. ³

In this article I will present a perspective from Traditional Chinese Medicine (TCM) and Chi Kung on why singing is such an effective type of “sound” therapy, but first it will be helpful to review some studies that have shown the health benefits of singing from a Western perspective. Barbra Teater and Mark Baldwin found in a case study that a singing-arts program contributed to the participants’ strong sense of self-development, health, and sense of community; Christina Grape, *et al.* found that singing lessons promoted well-being particularly in amateur singers; Gunter Kreutz, *et al.* found that “choir singing positively influences both emotional affect and immune competence” (623), with singing leading to an increase in S-IgA (Secretory Immunoglobulin A) and therefore improving the immune system.

In addition, listening to music has been shown to have therapeutic benefits. The noted otolaryngologist (ear, nose, and throat), Dr. Alfred A. Tomatis (1920-2001), developed the Tomatis method or Audio-Psycho-Phonology (APP) to use sound-listening as a medical treatment for a variety of conditions ranging from vocal problems to autism. He theorized that since the fetal ear developed at such an early stage during pregnancy, the ear was a major contributing factor in the whole development of a fetus. Part of his method includes listening to Gregorian Chant and Mozart (not to be confused with “The Mozart Effect”).

¹ Paper presentation, The Phenomenon of Singing International Symposium IX, Memorial University, St. John’s Campus, Newfoundland and Labrador, Canada, 7 July 2013.

² Barbra Teater and Mark Baldwin, “Singing for Successful Ageing: The Perceived Benefits of Participating in the Golden Oldies Community-Arts Programme,” *British Journal of Social Work* (2012): 1-19; Christina Grape, Maria Sandgren, Lars-Olof Hansson, Mats Ericson, and Töres Theorell, “Does Singing Promote Well-Being?: An Empirical Study of Professional and Amateur Singers during a Singing Lesson,” *Integrative Physiological & Behavioral Science* 38/1 (2003): 65-74; Gunter Kreutz, Stephan Bongard, Sonja Rohrmann, Volker Hodapp, and Dorothee Grebe, “Effects of Choir Singing or Listening on Secretory Immunoglobulin A, Cortisol, and Emotional State,” *Journal of Behavioral Medicine* 27/6 (December 2004): 623-635.

³ <http://www.heartresearch.org.uk/hearthealth/singinggood> (accessed 25 June 2013).

The perspective of Traditional Chinese Medicine adds a layer of understanding to the results shown in Western studies. There is a connection between the Chinese word for medicine, *yao*, and the Chinese word for music, *yue*.⁴ Chi Kung (also spelled Qigong), a Chinese term meaning energy work, represents a large body of exercises that often have breath work at the core; the exercises also make much use of mind intent.⁵ There are three general categories of Chi Kung: health, sports (including martial arts), and spiritual. Some exercises are accomplished while holding static postures (standing, seated, or lying down), while others make use of movement, such as the forms of T'ai Chi Ch'uan. A subset of Chi Kung focuses on specific sounds that are practiced in order to improve the health of internal organs; in this article I will concentrate on one such routine known as the Six Healing Sounds (*Liu Zi Jue*). Tao Hongling is credited with creating this exercise during the time of the Southern and Northern Dynasties (420-589 A. D.).⁶ The Six Healing Sounds set is also known by several similar names, including the Six-Word Secret, the Six-Chi Method, the Six Healing Exhalations, and the Six-Sound Secret. Although these exercises originate from China, the universal sounds apply to languages and practitioners around the world, and this article will address ramifications for how these Chi Kung sounds interact with singing practices.

Sound is a useful component of Chi Kung because vibration is a concentrated energy that can be directed throughout the body.⁷ Objects have certain frequencies at which they are resonant—that is, frequency levels at which sympathetic vibration sets in. An acoustical phenomenon known as constructive interference occurs when two objects vibrate together at the same frequency, producing an intensification of effect. In Figure 1a, constructive interference is evident in the top wave as a summation of the two waves below it; Figure 1b shows the opposite condition of destructive interference, where two waves are 180 degrees out of phase with each other, thereby cancelling each other out.

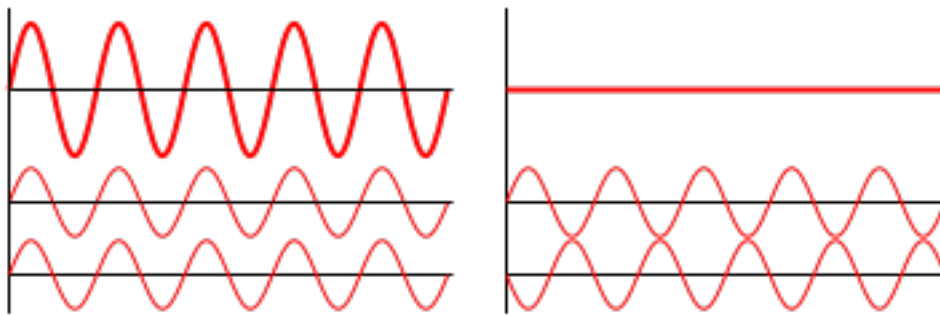


Figure 1. ⁸ a) Constructive Interference b) Destructive Interference

⁴ Pamela Tsai interview with Yo-Yo Ma, cited in Christine Stevens, *Music Medicine: The Science and Spirit of Healing Yourself with Sound* (Boulder, CO: Sounds True, 2012), 9.

⁵ *Chi* refers to energy, while *Kung* refers to work. *Chi Kung* is also commonly translated as “energy cultivation.”

⁶ Dr. Ma Li-tang (1903-89) is credited with popularizing this Chi Kung set in modern China; see Kenneth S. Cohen, *The Way of Qigong: The Art and Science of Chinese Energy Healing* (New York: Ballantine Books, 1997), 165.

⁷ The Swiss physician, Hans Jenny (1904-72), published work showing how sound waves affect fluids, powders, and liquid paste; he demonstrated this through the use of Chladni patterns.

⁸ [http://en.wikipedia.org/wiki/Interference_\(wave_propagation\)](http://en.wikipedia.org/wiki/Interference_(wave_propagation)) (accessed 19 September 2013).

A popular video on YouTube, “Amazing Resonance Experiment!” shows Chladni-type effects when salt is placed on a vibrating plate; the resonance that forms at various frequencies can be seen in the standing patterns of salt.⁹ This video makes it easier to imagine how sound waves interact with and affect the body.

Another acoustical phenomenon that is relevant to this study is harmonic spectrum, the complex of frequency components that is present in any given sound. An extreme example of exploiting formant structure in performance is overtone singing, also known as harmonic singing or throat singing. In this practice, a singer is able to make perceptible to listeners both the fundamental frequency of a tone and a melody formed of overtones. To illustrate this concept clearly, here is an excerpt of harmonic singing with David Hykes:

<http://www.youtube.com/watch?v=mc51wpnoOmQ>.¹⁰

Getting back to the topic of resonance, this effect extends to the organs of the body; each organ has a naturally resonant frequency according to TCM, and thus, each of the Six Healing Sounds is believed to provide benefit to a specific organ pair by stimulating the resonant frequency of those particular organs. Chi Kung master Mantak Chia believes that stimulating the organs in this manner helps the body to remove excess heat with sound acting as a detoxifying agent.¹¹ As a major component of its comprehensive medical system, TCM recognizes twelve meridians, or energy pathways, in the body; these channels are associated with the twelve primary organs. Later in this article I will list the six healing sounds and discuss their applicability to Western singing practices.

The Five Elements

The Five Elements, or “Wu Xing,” are a framework in traditional Chinese philosophy of viewing nature, health, and many other aspects of physical reality. The elements are wood, fire, earth, metal, and water (they are also known as “The Five Phases” or “The Five Processes,” as illustrated in Figure 2).

⁹ <http://youtu.be/wvJAgUBF4w> (accessed 19 September 2013).

¹⁰ *Rainbow Voice* (accessed 19 September 2013).

¹¹ Chia comments that “When all the sounds and postures are done in the proper order, the heat of the body is evenly distributed by the intestinal tract, and each of the organs regains its correct temperature.” See Mantak Chia, *The Six Healing Sounds: Taoist Techniques for Balancing Chi* (Rochester, VT: Destiny Books, 2006), 14.

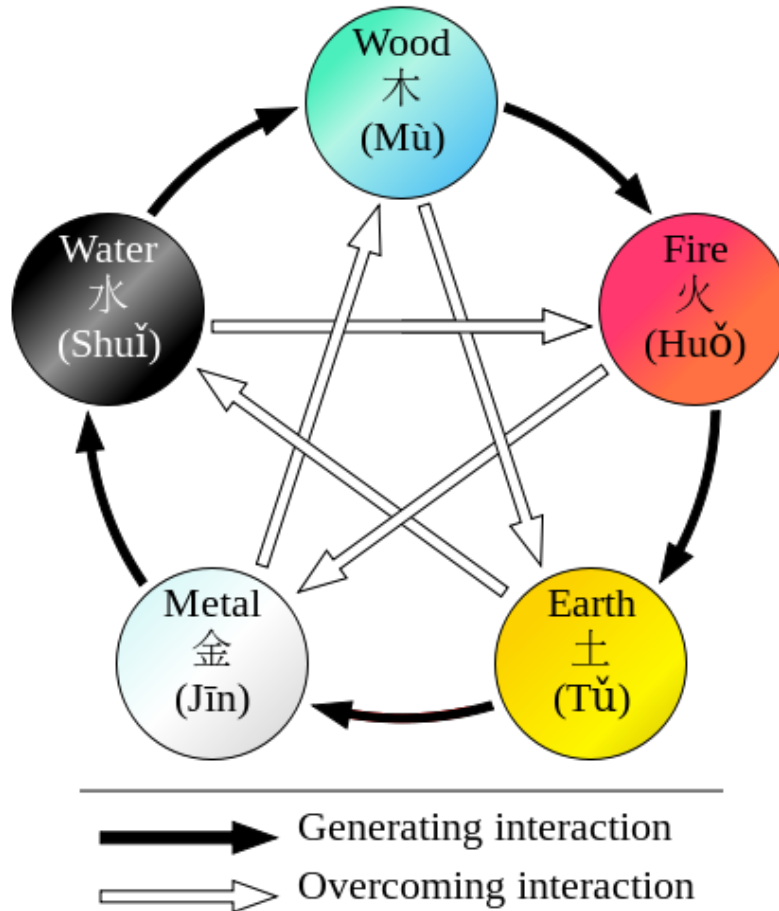


Figure 2. The Five Phases¹²

Two different sequences are represented in this diagram. In the Overcoming Interaction, wood overcomes earth, earth overcomes water, water overcomes fire, fire overcomes metal, and metal overcomes wood; examples in the Overcoming Interaction are shown in table 1. On the other hand, in the Generating Interaction, wood produces fire, fire produces earth, earth produces metal, metal produces water, and water produces wood.

| Action | Example |
|-----------------------|--|
| Wood overcomes earth | Seeds growing out of the earth into plants and trees |
| Earth overcomes water | Dam used to contain water |
| Water overcomes fire | Water extinguishing fire |
| Fire overcomes metal | Fire heats metal allowing it to be shaped |
| Metal overcomes wood | Axe used as tool to chop down tree |

Table 1. Examples of Overcoming Interaction.

¹² http://en.wikipedia.org/wiki/Wu_Xing (accessed 19 September 2013).

In Traditional Chinese Medicine (TCM), each element is associated with a primary and secondary internal organ. The following table summarizes these relationships, along with other associations such as season and color.¹³

The Five Elements

| Element | Wood | Fire | Earth | Metal | Water |
|------------------------------|---|------------------|-----------------------------------|-------------------------------------|--------------------|
| Primary Organ (yin organ) | Liver | Heart | Spleen | Lungs | Kidneys |
| Secondary Organ (yang organ) | Gallbladder | Small Intestine | Stomach, pancreas | Large Intestine | Urinary Bladder |
| Season | Spring | Summer | Change of seasons (Indian summer) | Fall | Winter |
| Color | Green | Red | Yellow | | Black or dark blue |
| Emotions (Positive) | Loving kindness, benevolence, forgiveness | Joy, honor, love | Fairness, justice, openness | Courage, righteousness, self-esteem | Gentleness, wisdom |
| Sense | Sight | Speech | Taste | Smell | Hearing |
| Sound | Shouting | Laughing | Singing | Weeping | Groaning |

Table 2. The Five Elements

In looking at this table, one can see that discussion about an organ from a perspective of TCM refers not just to the anatomical organ, but also to a more general organ function.

The lungs are the primary organ for the metal element; since the associated season is fall, maximum benefit will be attained by practicing lung exercises in the fall. The secondary organ is the large intestine, and it too will benefit from practice in the fall. The associated color is white—added benefit is thought to accrue through the visualization of this color during exercise. One of the positive emotions linked to the metal element is courage, and this characteristic can also benefit from the practice of lung exercises.

The Six Healing Sounds Chi Kung Set

The Six Healing Sounds Chi Kung set uses specific sounds and movements to address health of the lungs, heart, spleen, liver, kidneys, and overall body. As an example of the health category of Chi Kung sets, the Six Healing Sounds has a special purpose of detoxifying the organs. (The internal organs can be seen in Figure 3.)

¹³ Table compiled from Mantak Chia and Tao Huang, *The Secret Teachings of the Tao Te Ching* (Rochester, VT: 2002); and Aihan Kuhn, *Simple Chinese Medicine: A Beginner's Guide to Natural Healing & Well-Being* (Wolfeboro, NH: YMAA Publication Center, 2009).

The set can be performed in a seated meditative fashion without accompanying movements, or standing in an active fashion with movements. Although modern practice in China tends to have a group performing the sounds at the same pitch level, older practice did not call for a unified pitch. The reader might wonder: if the pitch level can vary from individual to individual, how is it that the exhalations can be tied to specific organs? The answer has to do with formants, those fixed harmonic spectrums that are unique to vowel sounds regardless of fundamental pitch. As long as a vowel sound is consistent, the upper-frequency components that are part of the formant will remain fixed, and therefore a commonality exists in the upper frequency component even if individuals vary in fundamental pitch.

As this Chi Kung set has an older history, variations have developed through the years that have slight differences and yet share the same principles. I am most familiar with versions as taught by Chi Kung masters Kenneth Cohen and Mantak Chia, and the structure included in this article is based primarily on the versions taught by Cohen.

Cohen provides two different versions of the exercise: a seated, meditative version, and a standing, active version. The meditative form is shown in Table 3:

| Organ | Sound | Notes |
|---------------|--------------------------|---|
| Liver | Shh shaped with slight ü | |
| Heart | Heu (as in hook) | Almost in whisper |
| Spleen | Hooo—as in “who” | |
| Lungs | See-ahh | Like a sigh |
| Kidneys | Chur-ooo-eee | |
| Triple Heater | SEEEE | Hint of Shhh with smiling shape of mouth and visualization of happy feeling throughout body |

Table 3. Meditative Version of The Six Healing Sounds

The Triple Heater (also known as Triple Burner) is not actually an organ, but rather a bodily function; it concerns the balance of energy among the upper burner (respiratory and circulatory: heart, lungs), middle burner (digestive: solar plexus, spleen, stomach), and lower burner (reproduction and elimination: lower abdomen, liver, kidneys).

The meditative version closes with a technique of swallowing saliva; the purpose for this activity at the end of Chi Kung is to aid in removal of excess heat or dryness in the organs. The sequence is:

- Begin by clicking the teeth together 36 times (known as “Beating the Heavenly Drum”—another musical reference). This helps to stimulate a greater flow of saliva and “awaken the spirits of the brain.”
- Next, roll the tongue in a circle inside the mouth 18 times in each direction to stir up the saliva (known as “Red Dragon Stirs the Sea”).
- Divide the saliva in the mouth into three equal portions. Take a deep inhalation through the nose and swallow a third of the saliva; as you exhale, imagine the saliva dropping down into the lower abdomen (dan tien); repeat and swallow the second portion of saliva; once again, repeat and swallow the remaining third.

Chia’s version of the lung sound is slightly different from Cohen’s in that he emphasizes only the hissing “S” sound—similar to the sound one hears in a controlled release of air from a balloon or tire. For years I have used a similar breathing drill with my choirs without realizing the connection to Traditional Chinese Medicine. In the exercise I have used in the past, choir members are asked to exhale with a hissing sound; this has been an effective drill for promoting well-supported and constant exhalation, which in turn helps regulate steady pitch and power. Thus, it was a nice discovery to find that an exercise we use for breath work has health benefits for the lungs according to TCM.

Traditional Chinese Medicine also notes a correlation between emotions and the organs; for example, courage is associated with the lungs. Perhaps Tarzan beating on his chest affirms the connection between courage and the lungs! In fact, Chia states that an antidote to nervousness is to employ the lung sound, so certainly this could be an effective strategy for those who suffer from performance anxiety. ¹⁴Overall, performing the Six Healing Sounds set is thought to aid in balancing emotions.

Cohen’s active version is shown in Table 4 ¹⁵:

| Organ | Sound | Nickname | Reps |
|-------------------------|---|---|----------------|
| Whole Body-- Warm up | No sound-- movement only) | Harmonizing the Breath | 9 |
| Lungs | See-ahh | The Lion’s Roar | 3 |
| Heart | Heu—as in Hook” | The Dragon Coming Out of the Sea | 3 |
| Spleen | Hooo—as in who” | The Owl ¹⁶ | 1 |
| Liver | Shh—shaped as in “Shuuu” ¹⁷ | The Monkey | 1 |
| Kidneys | Chrr-ooo-eee | The Bear | 3 |
| Whole Body | Ho (as in “Hoe”) | Expelling Toxins (Whole Body, “Breath Sound”) | 9 |
| Whole Body-- Closing | (quiet meditation) | | 1-2 minutes |

Table 4. Active Version of The Six Healing Sounds

¹⁴ Chia, *The Six Healing Sounds*, 22. Regarding the connection between hissing and courage, it is interesting to make reference to the use of hissing sounds by animals such as snakes when they feel threatened.

¹⁵ Cohen, DVD set *The Essential Qigong Training Course: 100 Days to Increase Energy, Physical Health and Spiritual Well-Being* (Boulder, CO: Sounds True, 2005); more detailed descriptions of the movements follow in the text.

¹⁶ This is a modern name for the exercise.

¹⁷ Jwing-Ming Yang comments that this sound calms the liver and therefore helps to stop bleeding and relieve pain from cuts; see Yang, *Qigong for Health and Martial Arts: Exercises and Meditation*, 2nd ed. (Boston: YMAA Publication Center, 1998), 3.

The practice of singing elongated vowel sounds is known in Western terminology as “toning”; Robert Gass writes about how the practice of toning is excellent for increasing lung capacity, and

The comments that “Because of the extended length of time we hold vowels in toning, we create especially strong internal vibrations of sound that wash through our organs and bones, stimulate the frontal lobes of the brain, and touch every cell of the body.”¹⁸ Since the active form of the Six Healing Sounds makes use of toning while the meditative version does not, one can assume that the active form will have an even greater impact on breathing capacity.

¹⁸ Robert Gass and Kathleen Brehony, *Chanting: Discovering Spirit in Sound* (New York: Broadway Books, 1999), 57.

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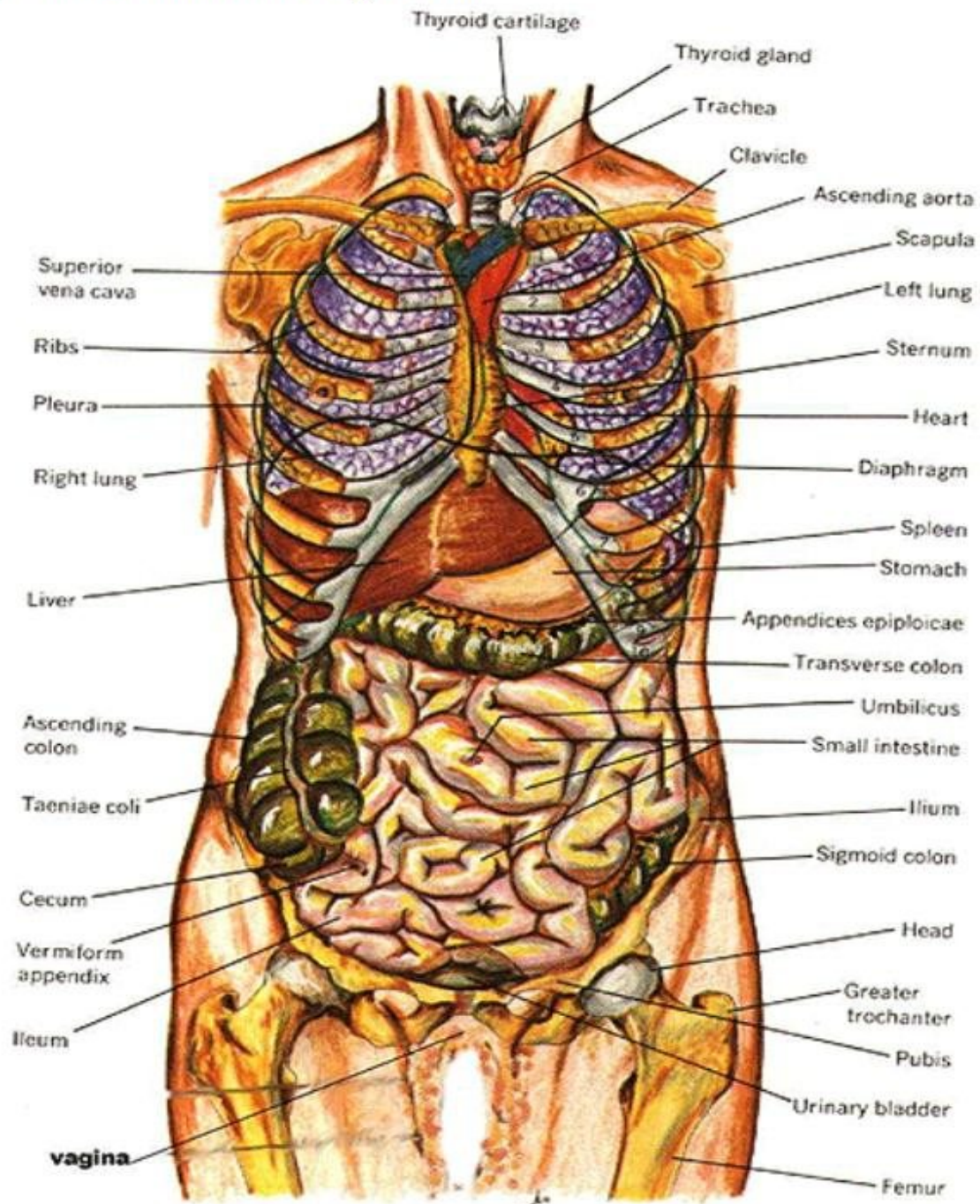


Figure 3. The Internal Organs ¹⁹

¹⁹ <http://pictureofhumanbody.com/Human-Body-Organ-Systems.php> (accessed 29 September 2013).

Active Version: The Movements Described in Greater Detail

The following descriptions give additional details about the movements for each healing sound in the active version.

Note: All standing exercises have the feet shoulder-width apart and parallel facing forward. The pelvis should be tucked in so that the back is elongated, with the head held as if suspended from the ceiling on a string. The knees are slightly bent and the body is very relaxed.

After each individual exercise (other than the concluding meditation), the opening exercise (Harmonizing the Chi) is repeated three times.

1) Harmonizing the Chi (Breath)

- For this exercise, both inhalations and exhalations are through the nose.
- Upon inhalation, bring the hands up (palm-side up) until arms are under the armpits, gently expanding the chest.
- Upon exhalation, bend forward 45 degrees at the waist and punch out the fists forward and out. Repeat for a total of nine times.
- Follow with three rotations of bicycle movements with the closed fists, powering the movements by rolling the shoulders in order to loosen the mid-back.

2) Lungs, Lion's Roar

- Upon inhalation, the hands rise in front of the body with palms facing up until reaching the middle of the breastbone.
- Upon exhalation, the hands push out diagonally with palms facing out, staying at shoulder height.

There is a method behind the movement of these exercises. Most people breath in a shallow fashion, emphasizing the chest area. The hand movement of the Lung exercise helps to reinforce deep breathing by starting at the diaphragm and moving up to the chest, modeling how the process of breathing starts from the diaphragmatic action. In other words, belly breathing is emphasized over chest breathing through these motions.

3) Heart, The Dragon Coming Out of the Sea

- Upon inhalation, imagine the breath going into the heart itself while raising the fists overhead. Hold your breath as you roll the fists toward each other and bring them down to the shoulders, doing a semi-squat (doing a full squat is acceptable as well).
- Upon exhalation, the hands reach toward the sky into a V formation with the palms facing each other. Toxins are released from the body as you make the heart sound.
- Inhale again on the way down with the hands moving back into fists facing each other.
- Exhale while going back into the V formation. There are three exhalations altogether.

4) Spleen, Qi to the Spleen

- Start with palms facing upwards at the waist.
- Upon first inhalation, the right hand moves upward so that the right palm faces the sky and is higher than your head, aligned above the left hand; the left hand moves down below the dan tien with the palm facing the ground.
- Upon first exhalation (through the nose, without sound), the upper body rotates to the left (rotating at the waist, not at the hips).

- Upon second inhalation (slow inhalation), maintain the same posture and hold it for about 10 seconds.
- Upon second exhalation (with the sound), bring hands palm-side up back to the side of the body above the hips as you rotate back to the forward position. Note: the “who” sound should have a buzzing quality (in which you can feel extra strong vibrations).

5) Liver, The Monkey

- Start with hands down at sides as fists.
- Upon inhalation, the arms lift straight forward and swing around with a sense of expanding the liver; hold the breath as you position the elbows toward the body with the fist palms facing up.
- Upon exhalation, keep your hands in the same position and lower your body by bending the upper body 45 degrees down. The elbows press in toward the body as you bend at the waist and make the sound.

6) Kidneys (and Adrenals), The Bear

- Start by massaging both kidney areas in the back, using the backs of your hands; use natural breathing during this time. Massage three times up and down.
- Upon inhalation, bring the hands up the kidney area in the back and spine and to the front of the body until shoulder height, culminating in the “Embrace the Tree” posture (bend knees as the arms round in front).
- Upon exhalation, maintain the “Embrace the Tree” posture. Note: when making the kidney sound, the ears feel like they are being tickled from inside. (This is important, because the ear is the sense organ associated with this element.)

The kidney sound is the most complex of the six healing sounds. The three phonemes that make up this sound invoke three different formants, and the resulting activity among upper frequencies would make for an interesting study in conjunction with Tomatis’s theories about the medicinal properties of higher frequencies. Many vocal and choral students have done warm-up singing drills in which the singer progresses through the different vowel sounds, such as “Mi, Me, Ma, Mo, Mu.” I often use this drill with my choirs, and I believe that the formant activity of shifting between the different vowel sounds has similar health effects to what happens with the action in the kidney sound.

7) Whole Body, Expelling Toxins

- Note: In this exercise, the feet should be slightly wider than shoulder-width, but still parallel. This exercise expels toxins from the body as a whole.
- Upon inhalation, bring both hands up in front of the body with palms facing toward each other and forearms about 45 degrees inward until palms are under shoulders. Imagine the whole body filling with fresh, pure energy.
- Upon exhalation, bend the knees and pass the hands in front of the body, then drop the hands and arms down in front of the body, carrying through up behind the body; the body should drop a bit as the hands and arms come down. As you bend, imagine that the old stagnant energy leaves through the exhalation.

8) Meditation

- In this concluding section, the right hand rests on the left hand with eyes lightly closed, body relaxed, and weight sinking into the ground.
- Let your mind experience whatever changes have occurred; perform a general body scan and enjoy the feelings.
- Finally, let the hands come down as you conclude the exercise, which should be done for about two or three minutes.

In TCM, all organs are considered to be interconnected, so it is best to practice the entire set rather than isolated portions. However, certain organs can be emphasized or isolated depending on need and season. Organs gain particular benefits when exercised during their particular seasons. The liver is associated with spring, the heart with summer, the spleen with Indian summer, the lungs with fall, and the kidneys with winter.

Conclusion

We know that the average singer uses a deeper level of breathing than the average non-musician, and that deep breathing leads to health benefits. Because Chi Kung promotes deep breathing just as singing does, there are natural complementary relationships between singing and Chi Kung. Having to sustain a pitch requires deeper breathing than the shallow conversational breathing that most people do, and so the Six Healing Sounds—especially the active form—bring about health benefits through the deeper breathing. Therefore, I believe that the practice of Chi Kung can be an effective complement to the practice of singing. Chi Kung emphasizes proper breath support through efficient body structure and diaphragmatic breathing, best practices for singing as well.

However, the most interesting contribution from Chi Kung and Traditional Chinese Medicine on the understanding of the health benefits of singing, I believe, is the idea that sympathetic vibration in the organs caused by the exhalation sounds leads to a detoxifying effect with related health benefits. I have a personal theory that other sounds we make in singing contribute similar, if less strong, health effects on the body through sympathetic vibrations. I hope that the coming years will see Western scientific studies that explore the effects of these relationships between sound and sympathetic vibrations in the internal organs.

Over the last fifteen centuries the Six Healing Sounds set has a history of enhancing health; Chi Kung offers a unique perspective on why singing has a multitude of health benefits.

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