

Part 1

Introduction

As long as I can remember my parents were enthusiastically involved in music research. Initially the goal was to expose secrets of producing the most beautiful piano tone and to explain how it was possible to play piano without tension. Later on, my father continued research in the singing art. Even though I chose to study science, music was always a very important part of my life. I began to collaborate with my father in the last 3 years of his life. In that time he established the direction of the research, which my mother and I continued for more than 20 years. Our inspiration during these years came from the natural beauty of the singing voice and its potential to affect audiences to the point of ecstasy. At the same time, from the history of the vocal art, we know how fragile the singing voice is, while the requirements from the vocal repertoire are often challenging. A singer must learn how to manage long phrases on one breath, possess clear articulation, and produce the highest notes. To achieve these goals, singers need to be very skillful in avoiding tension to preserve their voices for many years in their youthful state.

Our video course of 10 exercises provides singers assurance that these goals are possible to achieve. Singers of any style can learn how muscles should work to avoid tension. They can also acquire conditions that are beneficial for exposing the best quality of their voices. Diligently practicing these exercises singers gradually can build a secure vocal apparatus that will serve them for many years of creative work.

Exercise for the balanced neck

A not tensed condition of the neck is important for the singing process. Inside of the neck is the throat and the larynx and inside of the larynx are vocal cords. Excessive tension of the neck complicates the work of these organs. The balanced condition of the neck is demonstrated in the following exercise.

Action:

Drop the head forward. Slowly raise it and stop when you feel that the head is ready to go backwards. This balanced point between forward and backward directions feels very light and flexible with the neck easily movable. This is the criteria for the balanced neck.

ILLUSTRATION, 3:11

The condition of the head is very important for the understanding of singing without tension and should be maintained for the duration of the course.

Exercise for the condition of the upper body

Lungs should be prepared to receive increased amount of air necessary for the process of singing.

Action:

1. Raise the shoulders a little. Release them all the way down.
2. Finally slide the shoulder blades a bit together without raising the shoulders.

The movement of shoulder blades will slightly stretch the intercostal muscles: the muscles between the ribs. As a result, the lungs have more space to receive the increased amount of air.

ILLUSTRATION, 4:03**Exercise 1: for the release of tongue, throat, larynx, and lower jaw**

The strongest contraction of the tongue, throat, larynx, and lower jaw occurs during the action of swallowing. The release after swallowing will result in relaxation of these four organs.

The tongue will be relaxed with its tip touching the lower teeth, the middle section lying flat and the back slightly elevated.

The throat will assume its neutral condition acting as a pipe for the air to pass through.

The larynx that was elevated during swallowing returns to its neutral position as well.

While the lower jaw is squeezed during swallowing, when released it becomes unhinged. The movement of unhinging results in a slight opening of the mouth. Excessive opening of the mouth recruits muscles that are not beneficial for singing.

The singer should practice this action of unhinging of the lower jaw until it becomes a good habit. It plays an enormously important role for singing without tension.

Overall this exercise should be routinely performed prior to singing.

ILLUSTRATION, 5:30

Exercise 2: for diaphragmatic breathing

The diaphragm is a major muscle of inhalation. In the process of inhaling the work of the diaphragm results ultimately in the passive stretching of the muscles of the abdominal wall. The movement of the abdominal wall indicates the inner activity of the diaphragm.

Diaphragmatic inhalation is going to be used in the following breathing exercises and the same inhalation will be used only with increased amount of air in the singing exercises.

Natural exhale includes the collapse as well as active contraction of the respiratory muscles including the abdominal wall, the diaphragm and the lungs.

The exhaling process will be modified to provide singing with slow, gradual consumption of air.

Action:

1. Swallow and release then unhinge lower jaw as in Exercise 1.
2. Breathe evenly; imagine being asleep, sensing only the work of the diaphragm.

The indication of the work of the diaphragm is the passive slight stretching of the muscles of the abdominal wall.

ILLUSTRATION, 7:01

During singing diaphragmatic breathing will be used with increased amount of inhaling air.

Exercise 3: for the release of muscles of the abdominal wall

The muscles of the abdominal wall should only be passively stretched by the diaphragm; it is important not to contract them during singing.

The following exercise will provide criteria for the released abdominal wall that should be routinely performed before singing.

Action:

1. Bend over at the waist and verify with your hands that the abdominal wall is released. Memorize this sensation.
2. Slowly raise the upper body retaining as much as possible the sensation of the released condition of the abdominal wall.

ILLUSTRATION, 8:26

As a result the released abdominal wall creates an image of the abdomen as an empty sack hanging loosely from the ribs. This is an ideal sensation and this exercise should be routinely performed prior to singing.

Modification of exhaling process

Since the beginning of the development of the vocal art, voice teachers recognized the necessity to modify the exhaling process. The art of singing requires a gradual, slow escape of air without creating tension of the respiratory muscles. Vocal teachers worked very hard for years to accomplish this goal. However, the phenomenon of modification of the exhaling process was never explained with precision of the work of muscles. The explanation for modified breath control for singers is presented with Ex. 4a and 4b, 5a and 5b, and 6.

Exercise 4a: imitation of action of blowing out candles

Action:

1. Place hand close to pursed lips.
2. Exhale in short puffs imitating the action of blowing out candles.
3. Perform in light and fast manner.

Notice the slight expansion of the abdominal wall as a result of this action. This exercise serves as a quick and efficient warm up of respiratory muscles.

ILLUSTRATION, 10:19

Exercise 4b: complete exhale with slight expansion of the abdomen

Action:

1. Begin with Ex. 4a and continue to blow out while gradually slowing down the rate of exhale in the downward direction.
2. In the final round, exhale completely in downward direction to the bottom of the abdomen while continuing the blow out approach as described in Ex. 4a.

This type of exhale demonstrates that the air can be expelled from the lungs as in a natural deep sigh while the abdominal wall is slightly expanded. This is a skillful exhale without collapsing the abdominal wall that we will refer to “deep exhale.

ILLUSTRATION, 11:37

Exercise 5a: application of sipping force

Preparation:

A finger is lightly touching pursed lips.

Action:

1. Imitate the action of sipping through a straw.

The effort at the lips is quite strong continuing as a lighter drawing in force in the mouth cavity.

ILLUSTRATION, 12:42

Exercise 5b: synchronization of sipping force with “deep exhale”

Action:

1. Apply sipping force (Ex. 5a) simultaneously with beginning of exhale (Ex. 4a).

This synchronized action provokes continuation of expansion of the abdominal wall.

ILLUSTRATION, 13:20

Exercise 6: modification of the exhaling process

Preparation:

Abdominal muscles are released creating a sensation of the abdomen as an empty sack, hanging from the ribs as in Ex. 3. One hand is placed in front of pursed lips to monitor the flow of exhaling air. The other hand is lightly touching the abdomen, to monitor the activity of the abdominal wall.

Action:

1. Inhale as in Ex. 2 and in a smooth, uninterrupted fashion transition to pursed lips to synchronize sipping force with “deep exhale,” combining Ex. 4b and 5a.

The sensation is that the end of inhale is fused with the beginning of sipping force synchronized with “deep exhale”. As a result the passive stretching of the abdominal wall continues without break.

ILLUSTRATION, 14:55

Modified exhale leads to the slowing down of the exhaling process. Once applied to singing a musical phrase, this gradual exhale will provide slow escape of air avoiding tension of respiratory muscles. As the lungs are gradually depleted in the process of singing, the abdominal wall nevertheless remains passively stretched by the action of the sipping force.

Part 2

The singing process

The process of singing becomes more complicated with addition of articulation that tends to disrupt a smooth singing line. This especially concerns the production of consonants that activate a variety of muscles including tongue, soft palate, facial muscles and others. An effective solution is to functionally separate consonant and vowel production. Since vowel sounds require much less activity of muscles of articulation they approximate the singing process (Ex. 8-9). Separation of vowel and consonant production is the single principle that is applied to all of the different languages which significantly simplifies the study of the singing art.

The mastery of singing requires the blending of registers, smooth connection of intervals, and overall evenness. To achieve these qualities a single focusing point for all vowels, which is located in the region of soft palate adjoining the edge of the hard palate, is required. This focusing point, which is the highest point of the mouth cavity helps to separate the upper part of the mouth cavity from the throat, larynx and lower jaw.

Singing in the seemingly separated space of the upper part of the mouth cavity brings the best quality of voice due to minimized tension and negative vibrations in the throat, larynx and lower jaw. Outstanding vocal teachers and great singers of the “Golden Era” described the sensations of their beautiful, tension-free singing such as “singing in” (Garcia II), “singing as inhaling” (Lamperti), “singing as drinking” (Tetrazzini), and “singing within” (Caruso). However, this most important phenomenon was never explained by the language of muscles. In Ex. 6 it was demonstrated how application of sipping force contributes to the slowing down of exhaling. Once applied to singing, the sipping force also helps to retain the throat and larynx in the neutral condition thus avoiding tension. Ex. 8 will demonstrate how to apply the principle of sipping force to singing when resistance of pursed lips is effectively replaced by activation of the vocal chords.

Exercise 7: location and light activation of the soft palate

1. Swallow, and release the throat and larynx, unhinge lower jaw as in Ex. 1, and imagine the highest point of the mouth cavity – that is the soft palate adjoining the edge of the hard palate.
2. At first with your finger lightly touch this point and with almost imperceptible click activate slightly this region of soft palate.
3. Now practice this light activation without finger touch.

It is crucial that the neighboring muscles are not engaged in this moment of light activation.

ILLUSTRATION, 3:25

During singing inhale will remain essentially diaphragmatic as in Ex. 2, but the singing process requires increased flow of air. Consequently the diaphragm will be more active and the increased air flow will create a bigger passage in the mouth cavity.

The increased air flow will passively support activation of the soft palate adjoining the edge of the hard palate. The drawing in force as continuation of sipping force inside of the mouth cavity will lightly maintain this activation during singing.

Exercise 8: singing with vowels only

Preparation:

1. Release abdominal muscles as in Ex. 3, release the throat and larynx and unhinge the lower jaw as in Ex. 1.
2. Prepare pursed lips as resistance for exhaling air as in Ex. 6.

Action:

1. After swallow and release, focus on the sensation of the upper part of mouth cavity separated from lower released part.
2. Activate in the lightest way the focusing point as in Ex. 7. Without break inhale with increased amount of air that on its way will passively support activation of the focusing point. Blend the end of inhale with beginning of sipping force, synchronized with deep exhale (Ex. 6). Open the mouth with unhinged lower jaw while producing the sound of the vowel, *a*, placed in the focusing point (Ex. 7) in a breathy manner.

The sipping force now continues as a light drawing in force in the moment of vocal chords activation, provoking movement out of the abdomen. The movement out indicates not only the slowing down of the exhaling process, but allows production of the sound of vowels without tension of the throat and activation of the larynx.

3. Now repeat the same exercise without pursed lips, that is, in a non-breathy manner.

The most effective way to master this exercise is to alternate between breathy and non-breathy beginning making sure that the spectrum of sound is identical and feeling the drawing in force as continuation of sipping force.

ILLUSTRATION, 6:05

In breathy approach exhaling begins in an instant earlier than sound production, while in non-breathy approach movement out of the abdomen (an indication of exhaling) and beginning of sound production seemingly coincide.

Connection of wide intervals

Smooth connection of intervals, especially wide intervals in ascending direction is a very important skill in singing. The principle of separation of the upper part of mouth cavity from the throat, larynx and lower jaw by placing vowels in the same focusing point laid the foundation for smooth connection of intervals (Ex. 7-8). However, for ascending wide intervals, application of drawing in force should be internally increased to compensate for more consumption of air. As to descending wide intervals, drawing in force is naturally diminished for the lower note. To acquire the skill of smooth connection of ascending wide intervals follow Ex. 9, which is preliminary for singing any musical phrase that includes the wide ascending intervals.

Exercise 9: connection of wide ascending intervals

Action:

1. Release muscles of the abdominal wall, release the throat and larynx and unhinge lower jaw (ex. 1). Without special breath control activate focusing point (ex.7).
2. Produce at once in a small volume the higher note of the ascending interval, placing it in the focusing point.

While the vocal chords are activated in the larynx, their reflection feels seemingly from above in the highest point of the hard palate.

3. Follow quickly and lightly with descending scale ending with octave interval. Memorize the feeling of all sounds placed in one focusing point.
4. Now return to special breath control (Ex. 6, 8) and repeat this exercise singing in full voice, with unhinged lower jaw.

ILLUSTRATION, 8:54

While singing a phrase that includes a wide ascending interval, increase drawing in force for the higher note production to compensate for more consumption of air required for higher and/or louder sounds. Even in a phrase that begins in a low register be sure to place the low note in the focusing point in the upper part of the mouth cavity.

ILLUSTRATION, 9:39

Singing with articulation

The mastery of smooth connection in the singing process combined with clear articulation as in the speaking process seems an almost unattainable goal. However, clear articulation is crucial, allowing singers to find the most truthful intonation and to achieve the most convincing interpretation. An effective solution is to focus vowels in the highest region of the mouth cavity while focusing consonants in the upper frontal part. The advantage of this approach is that these two processes work independently while still complementing each other. This principle is valid for any language and singers of any style will benefit from it.

Consonant production is a complex process with many muscles engaged in different combinations including the tongue, the lower jaw, the soft palate, the lips, and other facial muscles. The focusing region for consonant production becomes the frontal upper part of the mouth cavity. The muscles of the upper lip that are very flexible and can be easily activated take a lead in production of consonants. The lower jaw and the muscles of the lower lip participate in articulation but not too excessively. Excessive activation of the lower jaw contributes to tension of the throat and larynx. This tension deteriorates the condition of work of vocal chords, having a negative impact on the spectrum of sound. Furthermore, the lower jaw is heavy and slow moving, thus impeding technique and interfering with the clarity of articulation if used excessively. The lower jaw should routinely return to its unhinged condition after being more activated. In the process of singing with consonants, the retaining of the focusing point for vowels remains the most important consideration (Ex. 7-8). The focusing point for vowels should be established once, right in the beginning of singing a song or aria. Activation of the muscles of the upper lip begins from the moment of

articulation. During singing of a musical phrase activation of the focusing point for vowels is maintained by increased air flow.

Exercise 10: singing with articulation

Preparation:

1. Release abdominal muscles as in Ex. 3, release the throat and larynx and unhinge the lower jaw as in Ex. 1. This vocal exercise is a repetition of Ex. 8, but with addition of syllable, **ba**.

Action:

1. Activate the focusing point for vowels (Ex. 7-8) and inhale at once with increased amount of air. Apply drawing in force synchronized with deep exhale; place the vowel, **a**, in the focusing point and add the syllable, **ba**, while activating the muscles of the upper lip.

Do not abandon the focusing point for vowels while adding activation of the upper lip.

The drawing in force applied to vowel, **a**, will provoke movement out of the abdominal wall (Ex. 8). The movement out of the abdomen indicates that throat and larynx remain neutral.

ILLUSTRATION, 14:02

2. Now continue this exercise this time beginning with the syllable, **ba**. The focusing point for vowel, **a**, is activated prior to inhaling, while the muscles of the upper lip are activated in the moment of articulation of the syllable, **ba**.

Do not abandon the focusing point for vowels while adding activation of the upper lip.

The drawing in force is applied now to the syllable, **ba**, provoking movement out of the abdominal wall (Ex. 8). The movement out of the abdomen indicates that throat and larynx remain neutral.

ILLUSTRATION, 15:09

The style of musical theater requires especially clear articulation, meaning that the muscles of the upper lip will be more activated. Consequently, the lower jaw and lower lip will be more actively engaged but still should not be used excessively as to provoke tension of the throat and larynx. In this example the attack of sound is rather energetic; consequently the drawing in force synchronized with deep exhale is applied faster.

ILLUSTRATION, 17:03

Final thought

During training it is important to pay the utmost attention to small details of the exercises. It is also crucial not to move to the next exercise until previous one becomes a good habit.

Additional research focused on the production of the highest notes

Concern with producing the highest notes in full voice as required by the repertoire of operatic and musical theater styles led me to additional research. In the end I came to the conclusion that a resonating point in the nasopharynx provides more security allowing for singing in full voice with significantly less tension. Employing the pharyngeal resonating point can also result in the extension of the modal singing range.

Further information about the short training course for the pharyngeal resonance is available on our website.

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