

Review Article

The relation of healthy breath and vocal training success

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Abstract

Breathing is the first activity and the need of the humans from that moment they are born. We can survive several days without eating or drinking yet we can spend only a few minutes without breathing. Particularly in this day and age, that is during Covid-19 pandemic, it has become difficult to breathe in behind our masks. The breaths we take have been insufficient for us making it hard to breathe. Perhaps, just because of the masks we have been wearing, the process of breathing has started to deteriorate, become unstable and disorganized. We have once again and thoroughly understood how important it is to breathe. Breathing = Life! Healthy breath provides us with self control over our bodies. Realizing how much it affects our brain, psychology, body and ability, how even singing affects the healing power of respiratory health will change our lives considerably. This article has been written for all of us, especially the young generation, on the purpose of raising awareness. The importance and effects of breathing in and breathing out process, which is natural, reflexive for each individual have been mentioned. Essential data to make our lives much more efficient and effective are presented with taking an effective and practical route to breathing healthily.

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Introduction

Inhalation and exhalation... Human beings perform this function 20,000 times a day on average (Acar, 2016: 234) And are we aware of every breath we take and exhale? Certainly our respiratory system automatically performs this function by itself and we don't have to think and apply it consciously. Just like the beating of our heart, the functioning of our digestive system, and other reflexive movements we make. Our brain is the main center, main controller of this whole operating system. When we get excited or experience stress, we begin to breathe more frequently and shallowly. Our heart starts to beat faster and our pulse rate increases. Our brain starts to play various tricks on us, our ability to think correctly and to make decisions weakens. You may sometimes have heard someone who noticed this from the outside said "take a deep breath, calm down ..." in order to make you calm down. In the meantime, we cannot prevent what might happen, but we can control it and it is possible to do that with breathing properly.



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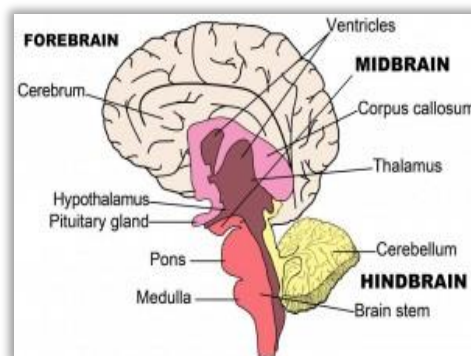
Figure 1.*Respiratory System*

Lama Angarika Govinda defined the breath as "the center of the secret of life". It is accepted that human life begins with the first breath and ends with the last breath. This situation is related to the way human beings breathe. Respiration is not found as a reflex for the oxygen requirement of the human body, but it is thought that consciously controlled respiration can be used to improve both physical and mental potential in humans (Gharote, 2003).

Most people start the breathing process from their breasts and terminate them. When people hold their breath, this causes their heartbeat to accelerate and to remain without oxygen. Being without oxygen also negatively affects the body. At this point, as breathing is the main element of life, breathing correctly is also a very important element for a healthy life. Deep breathing; It contributes to the individual's self-education, to survive in difficult conditions, and to be filled with peaceful and happy feelings. The deep breathing function is also referred to as the "diaphragm", as it emphasizes the use of the diaphragm located below the rib cage. With the contraction of Midriff; By pressing down the abdominal internal organs, it contributes to the expansion of the area allocated to the pleural cavity and thus the lungs also expand. The greater the strength of these contractions, the more air a person breathes (Sunitha & Ravi, 2013).

How Does Your Body Control the Process of Breathing?

"The respiratory center located in the human brain stem helps the individual to control his breathing function. At this point, it sends a message to the respiratory muscles telling them when to breathe. Medulla, which is located very close to the spinal cord, controls the spinal cord in order to protect breathing. Pons, which is a point of the brain very close to the Medulla, supports the regulation of breath designs. This order; involuntary, continuous and programmed. The respiratory process is the most specific when compared to other visceral (cardiovascular, endocrine, digestive, etc.) tasks. For this reason, it can also be organized voluntarily. Deliberate and behavioral control of breathing takes place in the cortex region of the brain and supports the perspective of breathing through cognitive control, similar to a self-initiated change in breathing before an energetic struggle or effort. This; Some examples include playing some instruments (trumpet, saxophone, flute, clarinet, etc.), singing or even talking" (Guz, 1997; Novotny & Kravitz, 2007).

**Figure 2.***Parts of Brain*

Especially in the last few years, the numbers of breathing therapies have been increasing and drawing our attention. Why do we get therapy for a self-functioning system? When our body encounters an unusual situation, some malfunctions occur in its functioning sometimes and starts to give an error, which is considered to be normal, because it intends to alert you about a situation that will endanger your health. If we do not take these warnings into consideration, an improper system replaces a properly functioning system, which starts to affect your whole body by showing a chain reaction. As a result of all these, it can lead you to cancer or death by creating permanent disorders and diseases.

A lot of breathing techniques are applied. Here, it is ensured that the person is brought back to an optimal respiratory order and is reminded by applying the technique she/he needs. In what we call "deep breathing", it is included to use the diaphragm as actively as possible. When breathing is not done reflexively, that is, when it is done consciously, we do not use the activity of the diaphragm (İşsever, 2017).

The breathing process should occur spontaneously; we should not think about it. While we are working on breathing techniques, of course, we are at a certain level of consciousness and awareness, but the rest should be done reflexively so that our muscles can acquire a new habit.

Breath takes place in certain patterns. Schemes enable behavior to occur in humans. Breathing is among these behaviors. Human behavior is an important representation of the person. For this reason, breath flows at an extremely important point in revealing human personality (Bordoni, Purgol & Bizzarri, 2018).

Does Singing Improve Breathing?

Correct use of breath is the basis of singing and giving the correct sound. How many of us could have guessed that singing, which is enjoyable for children and adults, also provides you with the right use of breath? Just the joy of singing is a therapy in itself.



Figure 3.

Breathing and Singing

The necessity of including voice and breathing exercises in singing activities in order to support a child's use of his voice effectively, beautifully and correctly has been stated many times in international literature (Rauduvaite, Lasauskiene, Abramauskiene & Chuang, 2017; Phillips, Williams Edwin, 2011; Kenney, 2011; Phillips & Vispoel, 1990).

As in the international literature, when academic studies in this field are examined in our country, there are many studies emphasizing the importance of sound and breathing exercises in song teaching. One of these studies is the work of Mutlu Yıldız and Karakelle (2017). In the study, it was emphasized that especially music teachers should practice voice and breathing regularly in song reading activities so that children can use their voices in a healthy and effective way.

Another study in the field belongs to Yiğit (2006). In his study, Yiğit (2006) found that children involved in choral work learn the characteristics and potential of their own voices, the vocal organ, the formation of sounds, and the ability to preserve sounds, while also learning the basic tasks and basic elements of music. Similarly, Davran (1997) stated that the basis of the art of singing is to be able to breathe correctly and effectively, while Gürkan Öztürk and Akgün (2007) stated that it is possible to produce a good quality voice only if you can breathe correctly.

Singing is aerobic in that it could be a frame of work out that moves forward the effectiveness of the body's cardiovascular system, with related benefits to overall health. Even if when sitting, singing includes energetic thoracic action, with benefits to the fundamental structure and work of the breathing mechanism. Major muscle groups are worked out within the upper body. Moreover, aerobic activity is connected to stamina, stress decrease and general health support over the lifetime. Progressing air current within the upper respiratory tract is likely to reduce opportunities for germs to prosper by keeping the aviation routes open (for example, to counter the indications of colds and flu). In general, there are entirety body physical benefits from singing (Welch, 2012).

While singing leads us to the right breath control, it also has positive effects on our brain. Having enough oxygen, the brain will increase its working capacity in order to make us become healthy individuals in terms of psychological, mental and physical aspects.

Scientists, who made analysis on the subject, identified five main benefits of singing. These five benefits are;

- **It reduces the problems that may be experienced in breathing.** Singing makes a difference, in a way, to strengthen the muscles that the human body uses to breathe. This means that we can learn to breathe much slower and deeper than before. However, breathing can be controlled much more easily, thanks to the strengthening of these muscles.
- **It helps to improve the skills of the own voice.** Singing gives much more control over the person's voice while speaking, while at the same time giving instructions on how to control and reflect one's voice.

- **It helps to improve people's posture.** Because singing contributes to the strengthening of the muscles that support human standing.
- **Enhances lung capacity.** When you acquire to have a control on your breathing, it becomes possible for you improve your lung capacity as well. Furthermore, it may help you minimize your coughing by teaching you the way how you should keep away from the reasons like taking breath in through your mouth in cold weather.
- **Improves your and your body's response against infection.** This will offer assistance decrease the require for pharmaceutical in case you have a flare-up (Silva, 2017).

For example, enjoyable musical attitudes and behaviors are recognized by knowledge of how to use or sing an instrument, relevance, fortitude, and effort to reward future experiences. This is mainly related to the long-term motivating, goal-oriented functions managed by "dopamine", which is defined as the donor substance. Dopamine; It plays a dominant role in the neurobiology of habit, learning, acquisition and remuneration. As a matter of fact, nicotine, cocaine, alcohol and heroin, which are among the habits expressed as bad habits, activate the dopaminergic systems. This is one of the main factors underlying the individual's addiction. As a result of similar musical experiences and other positive social situations, it has been proven that so-called natural rewards also activate dopaminergic neurons and also contribute to learning, acquisition and attention control (Keitz et al. 2003).

It has been determined that the sensitivity of human mesolimbic brain area to dopamine is inherited according to the majority of studies. It has also been proven to cause tremendous changes in people's reward-based attitudes and behaviors. The inherited "polymorphism" of the dopaminergic reaction explains the different motivational drives observed in children with the same educational and socio-cultural background. It is remarkable that dopaminergic activities have a very strong link with memory, acquisition, and learning. This promotes plastic adaptations in different areas of the brain regarding functions that can be learned (Altenmuller & Schlaug, 2015).

The Advantages of Deep Breathing

When the expression "breathing deeply" is reconsidered, we encounter breathing and exhalation exercises that contribute to the development of this function and provide this function. Yoga, some sports branches and of course singing involve deep breathing. The deep breathing function has the effect of establishing a person's tension. By controlling breathing and regulating the movement state of the lungs with conscious perception paths, it provides the control of the work of the heart through the vagus nerve by involuntary or involuntary involvement of the coordinate in the nervous system. Thanks to the exercises to be done, involuntary systems can be continuously controlled cognitively. In an internal cybernetic biofeedback cycle, this type of control influences brainwave activity, the production of endorphin-style neurochemicals, and the higher-level consciousness that it is in alpha conditioning and meditation (Loehr & Migdow, 1999; Reid, 1998; Taub-Bynum, 1984).

The benefits of taking a deep breath can be experienced instantly with daily practice. Conscious breathing without noise, pure and measured, can create glowing feelings in the individual. However, there are special benefits of holding the breath for not too long. This situation deepens and slows the person's pulse, balancing the blood pressure and increasing the exchange of expanded gas throughout the circulatory system. It also creates a compression that supports the inheritance of cellular respiration, which enables the blood to be enriched with more oxygen and contributes to the disappearance of carbon dioxide (Reid, 1998).

Conclusion

It is clear that breathing exercises are best done early in the morning, when the atmosphere is relatively cleaner and the positive energy is much higher (Edwards, 2005). As a vocal instructor, during online training, especially during the Covid-19 pandemic I observed that students are more energetic, more motivated and more inclined to think positively when the classes are started with body, breathing and voice exercises and carry on with singing. It is necessary for our body and also for our brain to breathing properly. Healthy life depends on it. If we live healthy, success in what we do is inevitable. This provides us motivation to make our occupation better.

As Mustafa Kemal Atatürk, who is the founder of the Turkish Republic and cared about the younger generation said, "A healthy mind in a healthy body." And a healthy body brings along a healthy brain.

This provides us the life energy, efficiency and success we need. No matter what technique you are in, you will feel and see the effects of breathing exercises in your body, education, relationships, occupation, studies, in short, your whole life.

Biodata of the Author



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