

DIAPHRAGMATIC BREATHING

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ABSTRACT

The diaphragm, a dome-shaped muscle located at the base of the lungs, plays a crucial role in the process of breathing. As you rightly pointed out, it is the primary muscle responsible for controlling breathing. When you inhale, the diaphragm contracts and moves downward, creating more space in the chest cavity. This downward movement of the diaphragm allows the lungs to expand, drawing air into them. Conversely, when you exhale, the diaphragm relaxes and moves back up, pushing air out of the lungs. Breathing practice, often referred to as diaphragmatic breathing or deep breathing, is a technique that focuses on engaging the diaphragm to promote more efficient and beneficial breathing patterns. This practice is not only about the physical act of breathing but also involves a mind-body connection that can help in managing stress and various psychosomatic conditions.

One of the key benefits of diaphragmatic breathing is its ability to reduce anxiety and stress. By engaging the diaphragm and taking slow, deep breaths, individuals can activate the body's relaxation response, leading to a decrease in stress levels. This technique is often used in mindfulness practices and meditation to promote a sense of calm and well-being. Additionally, diaphragmatic breathing can enhance oxygenation in the body. When you breathe deeply using your diaphragm, you allow for more oxygen to enter your lungs and be absorbed into the bloodstream. This increased oxygenation can have a positive impact on various bodily functions, including improving energy levels, cognitive function, and overall health.

Key Words: Diaphragmatic, breathing, anxiety, energy level.

INTRODUCTION

The diaphragm is the primary muscle that controls breathing. It's a large dome-shaped muscle located between lungs and your belly, just below the ribcage. It moves up and down when you breathe, allowing air to pass through into your lungs. The intercostal muscles between ribs are considered separate accessory breathing muscles. These are activated during chest breathing and require more effort and energy than using the diaphragm.

Breathing practice, also known as "diaphragmatic breathing" or "deep breathing," is defined as an efficient integrative body-mind training for dealing with stress and psychosomatic conditions. Diaphragmatic breathing involves contraction of the diaphragm, expansion of the belly, and deepening of inhalation and exhalation, which consequently decreases the respiration frequency and maximizes the amount of blood gases. The benefits of diaphragmatic breathing have been investigated in association with meditation and ancient Eastern religions (such as Buddhism) and martial arts.

Diaphragmatic breathing, also known as belly breathing, is a technique of breathing that engages the diaphragm, the primary muscle of respiration, to promote efficient and relaxed breathing (Holloway & West, 2012). This type of breathing is essential for maintaining healthy respiratory function, reducing stress and anxiety, and improving overall well-being.

During diaphragmatic breathing, the diaphragm descends and the abdominal cavity expands, allowing the lungs to fill with air more efficiently (Kelsey, 2012). This type of breathing is characterized by:

- Expansion of the abdominal cavity
- Descent of the diaphragm
- Increased lung volume
- Reduced breathing rate
- Increased oxygenation of the body

Research has shown that diaphragmatic breathing can have numerous benefits, including:

- Reduced stress and anxiety (Kox et al., 2014)
- Improved sleep quality (Harvey et al., 2014)
- Increased oxygenation of the body (Litchke et al., 2012)
- Improved respiratory function in individuals with chronic obstructive pulmonary disease (COPD) (Gosselink et al., 2011)

In addition, diaphragmatic breathing has been shown to activate the parasympathetic nervous system, promoting relaxation and reducing symptoms of anxiety and depression.

WHAT IS DIAPHRAGMATIC BREATHING?

Diaphragmatic breathing is a technique that helps you focus on your diaphragm, a muscle in your belly. It's sometimes called belly breathing or abdominal breathing. By "training" your diaphragm to open up your lungs, you can help your body breathe more efficiently.

Diaphragmatic breathing, also called belly breathing or abdominal breathing, refers to any and all deep breathing exercises that involve the use of the diaphragm and abdominal muscles. This is considered to be the proper way to breathe; however, many people lose this ability over time and have to consciously work to correct their breathing patterns.

WAYS DIAPHRAGMATIC BREATHING CAN BE USEFUL**DIAPHRAGMATIC BREATHING:**

- Shifts a person from a place of passivity to a place of activity; they are "doing something" about their symptoms
- Introduces training in increasing calm and relaxation
- Provides a simple way to quiet high-arousal states caused by pain or other symptoms and the emotions that it elicits
- Is extremely portable
- Costs nothing except an initial investment of time
- Can be used to manage other life stressors
- Can be used during difficult procedures, such as injections, imaging studies, etc.
- Provides a positive distraction
- Can be used to interrupt negative patterns of thought
- Demonstrates that clinicians consider non-pharmacologic interventions important for health

DEEP BREATHING

Deep breathing involves the whole torso, from the lower belly up to the base of the neck, and comprises three types of breathing patterns (Saraswati, 2013):

- *Abdominal breathing* emphasizes the engagement of the diaphragm and minimizes the activation of the ribcage. This type of breathing facilitates greater respiratory efficiency.
- *Thoracic breathing* emphasizes the expansion and contraction of the ribcage over the use of the diaphragm. This type of breathing spends more energy and is often related to intense physical activity and stress. By using it in combination with abdominal breathing, it helps the body obtain more oxygen.
- *Clavicular breathing* concentrates on the final stage of thoracic breathing, by drawing the shoulders and collarbone upward to allow more air into the lungs.

HOW TO PERFORM DIAPHRAGMATIC BREATHING

Here's the basic procedure for diaphragmatic breathing. It may be easiest to practice while lying flat on your bed or the floor when you first start.

1. Sit or lie down on a comfortable, flat surface.
2. Relax your shoulders, shifting them downward away from the ears.
3. Put a hand on your chest and a hand on your stomach.
4. Without straining or pushing, breathe in through your nose until you can't take in any more air.
5. Feel the air moving through your nostrils into your abdomen, expanding your stomach and sides of the waist. Your chest remains relatively still.
6. Purse your lips as if sipping through a straw. Exhale slowly through your lips for 4 seconds and feel your stomach gently contracting.
7. Repeat these steps several times for best results.

Benefits of belly breathing

Belly breathing, also known as diaphragmatic breathing, has numerous benefits, including:

1. **Reduced stress and anxiety:** Belly breathing can help calm the nervous system and reduce stress hormones (Kox et al., 2014).
3. **Increased oxygenation:** Belly breathing allows for more efficient oxygenation of the body, which can improve cognitive function and overall health (Ley, 2009).
4. **Lower blood pressure:** Regular belly breathing practice has been shown to lower blood pressure and reduce the risk of heart disease.
5. **Improved posture:** Engaging the diaphragm through belly breathing can help strengthen core muscles and improve posture).
6. **Enhanced athletic performance:** Belly breathing can improve endurance and performance in athletes by increasing oxygenation and reducing stress (Kox et al., 2014).

7. Reduced chronic pain: Belly breathing can help reduce chronic pain by releasing endorphins and promoting relaxation (Morone et al., 2008).

DIAPHRAGMATIC BREATHING EXERCISES

Patterns are created by deliberately adjusting the ratio of inhaled to exhaled, adding breath holds, and adding resistance to the breath with various configurations of our lips, tongue, and nasal cavity.

1. Square breathing

In this square-breathing exercise, equalize the ratio of inhaled, pauses, and exhaled with this beginner's exercise for overall relaxation.

2. Anchor breathing

Use visualization and metaphor in this grounding exercise.

3. Yogic breathing

Incorporate yoga practice in this deep-breathing exercise.

4. Physiological sigh

Quickly break the cycle of anxiety with the physiological sigh exercise led by Andrew Huberman. Just one physiological sigh can decrease anxiety in the moment. A daily five-minute practice of cyclic sighs is shown to decrease stress for 24 hours

RIB-STRETCH BREATHING

Here are some steps to perform rib stretch breathing (<https://blog.paleohacks.com/rib-stretches-release-back-pain-improve-posture/>)

Start your gentle stretching by breathing fully into the ribs using this calming side stretch. On each inhalation, focus on breathing into the back and sides of the ribs, expanding on each inhale and releasing tension on the exhale.

1. Start on your hands and knees in tabletop position. Bring your toes to touch and send your hips back and down onto your heels. Bring your knees wide and stretch your arms out in front of you.
2. Walk your hands over to the right, far enough to feel a stretch on the left side of the body. Stay here for 5 deep breaths.
3. Walk your hands through center and then over to the left side. Hold for another 5 breaths.

Numbered breathing

Dr. Weil popularized this breathing technique to help people manage stress and anxiety. The 4-7-8 breathing technique is based on the pranayama breathing exercise that is practiced during yoga for relaxation. (Huffington Post. The 4-7-8 Breathing Technique Could Help You Fall Asleep In Just 60 Seconds, Scientist Claims.)

You can practice 4-7-8 breathing anywhere and at any time. When you're first learning, try to practice at least twice a day, but you can do it as often as you want. Only do it for four cycles in a row in the beginning. After you get used to it, you can work up to eight cycles. You may feel lightheaded at first, but this will pass.

1. Find a comfortable place to sit with your back straight.
2. Place your tongue against the back of your top teeth and keep it there.
3. Exhale completely through your mouth around your tongue, making a whoosh sound. Purse your lips if it helps.
4. Close your lips and inhale through your nose for a count of four.
5. Hold your breath for a count of seven.
6. Exhale completely through your mouth making a whoosh sound for a count of eight.
7. This completes one cycle. Repeat for three more cycles.

Do 4-7-8 breathing anytime you feel stressed. It will become more powerful as you use it. Practice doing it before you respond to an upsetting situation and whenever you're having trouble getting to sleep.

BOX BREATHING

Box breathing is a form of yogic deep breathing employed by the United States Navy SEALs and by stressed-out people everywhere. It's also known as sama vritti pranayama, born of the yogic practice of pranayama, or focusing on the breath.

Additionally, diaphragmatic breathing can enhance oxygenation in the body. When you breathe deeply using your diaphragm, you allow for more oxygen to enter your lungs and be absorbed into the bloodstream. This increased oxygenation can have a positive impact on various bodily functions, including improving energy levels, cognitive function, and overall health.

Moreover, practicing diaphragmatic breathing has been shown to help lower blood pressure. By engaging the diaphragm and promoting slower, deeper breaths, individuals can activate the parasympathetic nervous system, which is responsible for relaxation and lowering heart rate and blood pressure. This can be particularly beneficial for individuals dealing with hypertension or seeking to improve their cardiovascular health.

In conclusion, diaphragmatic breathing is a powerful technique that offers a range of benefits for both physical and mental well-being. By understanding the role of the diaphragm in breathing and incorporating deep breathing practices into your routine, you can experience reduced stress and anxiety, improved oxygenation, and lower blood pressure. It is a simple yet effective tool that can be utilized in various settings to promote overall health and relaxation.

1. Breathe out slowly, releasing all the air from your lungs.
2. Breathe in through your nose as you slowly count to four in your head. Be conscious of how the air fills your lungs and stomach.
3. Hold your breath for a count of four.
4. Exhale for another count of four.
5. Hold your breath again for a count of four.
6. Repeat for three to four rounds.

CONCLUSION

Breath training is an integral part of yoga as well as a means of creating a more balanced, healthy lifestyle. Diaphragmatic breathing improves overall health of a person. It is also effective in reducing the pre-examination stress. So, it should be taught to students to relieve pre-examination stress which further improves their examination performance.

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