

1. Deep Breathing in Stress Management

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Abstract:

Stress is defined as an organism's physiological reaction in which various defense mechanisms are activated in response to a perceived threat or increased demand. Hypertension is a major factor to cardiovascular disease, and regular deep breathing exercise (DBE) appears to be a potential intervention for lowering blood pressure and stress in adults. DBE is simple, time-saving, and does not require specific equipment, allowing for involvement in a wide range of contexts. The workplace is an ideal setting to implement DBE at the national level for a variety of reasons, including a large proportion of waking hours spent there, high levels of sedentary time, the prevalence of work-related stress, and regular breaks throughout the day, which may reduce worker error. In this paper, we will discuss. Deep Breathing for Stress Management.

Keywords:

Deep Breathing, Stress Management, Exercise, Relaxation Technique, Mindful Breathing, Stress Relief, Diaphragmatic, Box Breathing, Detoxification, Increased Energy

1.1 Introduction:

Life is defined as the span between the first and final breaths. Breathing is behavioral, but respiration is reflexive; thus, breathing and respiration are distinct phenomena.

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Breathing is based on the movement of energy downward and upward, the expansion and contraction of the chest and belly areas in the physical body, and how this flow impacts our bodies physically, intellectually, and spiritually.

Deep breathing involves gently inhaling through the nose and exhaling through the mouth, utilizing the diaphragm (the thin muscle that separates the chest from the abdomen) and abdominal muscles.

This helps to increase the amount of oxygen in the blood, lower blood pressure and pulse rate, and relieve muscle tension. [1]

Breathing techniques known as pranayama are employed in a variety of ways, including conscious, intermittent, nasal, and abdominal breathing, which uses the upper, middle, and lower regions of the lung.

Breathing techniques are commonly used for relaxation, stress management, controlling psychophysiological states, and improving organ function.

Stress can be caused by a variety of factors, but it differs from person to person. According to psychological studies, breathing practice is an effective non-pharmacological intervention for emotional improvement, including anxiety, depression, and stress.

Furthermore, breathing techniques are frequently used in therapeutic therapies for mental diseases such as post-traumatic stress disorder, movement disorders, phobias, and other stress-related emotional problems.

A relaxing technique in which the individual concentrates on taking calm, deep breaths. Deep breathing involves gently inhaling through the nose and exhaling through the mouth, utilizing the diaphragm (the thin muscle that separates the chest from the abdomen) and abdominal muscles.

This helps to increase the amount of oxygen in the blood, lower blood pressure and pulse rate, and relieve muscle tension. Deep breathing can be used to reduce tension, pain, and anxiety. Also known as abdominal breathing and diaphragmatic breathing.
[2]

Deep breathing, also known as diaphragmatic breathing, is a practice in which one purposefully takes slow, deep, even breaths with the diaphragm.

This approach not only permits more oxygen to enter the bloodstream, but it also offers an alternative to shallow breathing, which primarily engages the upper chest.

There are various significant elements of deep breathing that underline its importance, including:

- Natural stress reliever that reduces anxiety levels.
- Oxygen boosters improve blood supply.
- A therapeutic strategy commonly used to manage anxiety and panic episodes.
- Part of numerous relaxing techniques.

The benefits of deep breathing go beyond the initial relaxation it delivers. Integrating this practice into regular routines might help people improve their mental clarity, emotional stability, and their body's natural ability to manage with stress.
[3]

1.2 Breathing and Stress:

The basic function of breathing is to absorb oxygen and exhale carbon dioxide through lung movement.

The diaphragm (a muscle sheet beneath the lungs) and the muscles between the ribs are responsible for lung movement.

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When a person experiences stress, their breathing rhythm alters. A nervous individual typically takes tiny, shallow breaths, moving air into and out of their lungs with their shoulders rather than their diaphragm. This method of breathing upsets the body's gas equilibrium.

Shallow over breathing, often known as hyperventilation, can exacerbate physical stress symptoms and prolong feelings of anxiety. Controlling your breathing might help relieve some of these symptoms.

DBE is a broad word that refers to various sorts of non-resisted, paced breathing strategies, such as yogic breathing or Pranayama, diaphragmatic breathing, and abdominal breathing, to mention a few.

In addition to differences in overall forms of breathing training, there are substantial disparities in how breathing training is used. [4]

For example, two studies claiming to investigate "diaphragmatic breathing" may differ in the breathing frequency used (breaths/minute), the fraction of time spent inhaling and exhaling per breath, the use of nose or mouth breathing, the amount of time spent per day performing DBE, or the time of day that the intervention is performed, among many other variables.

Given the number of factors involved, it is not unexpected that existing research studying breathing therapies have used a variety of study designs, making it difficult to completely appreciate the possible health benefits of breathing training at this time.

However, the preponderance of research suggests that DBE can enhance certain aspects of human health, such as lower blood pressure and psychological stress (Figure 1.1), which may indirectly increase productivity by reducing sick day consumption. [5]

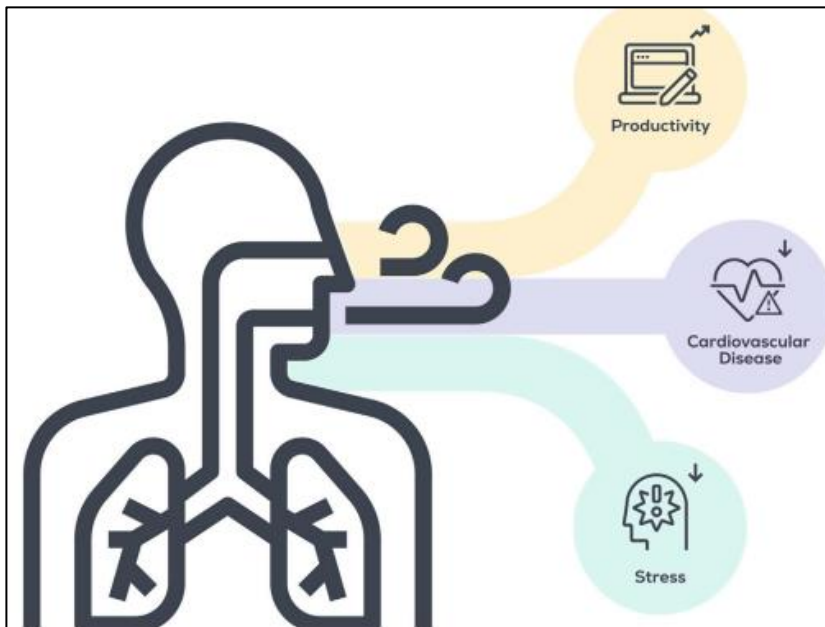


Figure 1.1: Potential Benefits of Implementing DBE in The Workplace.

Breathing, an act so fundamental to life that it sometimes goes unnoticed, holds the secret to combating the never-ending tides of stress that modern life delivers. When used with intention, this automatic reflex can become a potent tool for managing the body's stress response.

The science behind this is based on the body's ability to go from a state of high awareness, known as the fight-or-flight response, to a more relaxed, restorative state known as the rest-and-digest mode. Here's how deep breathing can help you manage stress:

- 1. Activation of the Parasympathetic Nervous System:** Deep breathing stimulates the vagus nerve, which connects the brainstem to the belly.
- 2. Reduction of Cortisol Levels:** Deep breathing exercises can help control cortisol, sometimes known as the 'stress hormone'. Reduced cortisol levels can help to ease anxiety and stress.

- 3. Enhanced Oxygen Exchange:** Deep, steady breaths increase oxygen-carbon dioxide exchange in the blood, which is necessary for proper physical function and can help clear the mind.
- 4. Mindfulness and present Moment awareness:** Focusing on the rhythm of the breath gives focus to the current moment, which helps to distract from stressful thoughts and sensations. [6]

1.3 Deep Breathing Techniques:

Hundreds of different deep-breathing techniques have evolved throughout the years, but many of them revolve around the concept of breath control.

Because the rhythm of a person's breathing is so closely linked to their current emotional state, they can better manage their moods by intentionally controlling the pace of their breath.

Breathing is an automatic reaction. You don't have to think about it—it just happens! However, being conscious of your breathing might help you feel more relaxed. Here are a few deep breathing methods that you may practice and perform practically anywhere, as long as you are comfortable. [7]

1. Mindful breathing:

Consider sniffing your favorite aroma as a simple method to become more conscious. Smelling is essentially taking a deep breath on purpose. Practice this attentive breathing technique:

- Close your eyes and picture smelling your favorite aroma.
- Breathe in for two counts.
- Breathe out for four counts.
- Repeat for 1 minute.

2. Balloon and candle breathing:

This breathing technique promotes slow, complete inhales and exhales to relax your mind and body. Here's how to practice balloon and candle breathing:

- Sit with your back straight and legs crossed, or flat on the floor if in a chair.
- Inhale deeply via your nose, expanding your lungs like a balloon.
- Take a deep breath and blow out the candles on your birthday cake. Repeat for one minute.

3. Breathe in, bubbles out:

This method is an excellent approach to focus on slowing down your breathing because you must blow a bubble very slowly or it will pop. Try these bubble-blowing breaths.

- Take a deep breath in through your nose to fill your lungs with air.
- Hold your breath for 1–2 seconds.
- Slowly blow bubbles out of your mouth, as if using a wand.
- Repeat 3-5 times. [8]

4. Relaxation technique: Breathing meditation for stress relief:

Deep breathing is a simple yet effective relaxation method that focuses on taking full, cleansing breaths. It's simple to learn, can be done practically anyplace, and is an effective approach to reduce stress.

Deep breathing is the foundation of many other relaxation techniques, and it can be paired with other relaxing components such as aromatherapy and music.

You only need a few minutes and a space to stretch.

1.4 Deep Breathing Exercises:

Relaxation techniques include chest and abdominal breathing. It successfully handles the body's numerous activities since it relaxes the muscles and regulates the pace of heartbeat and pressure. Third, because there is no apparatus or tool required, the exercise can be performed at any time.

Deep breathing techniques are useful for reducing stress, anxiety, and other physical and health difficulties. Generally, it is the most effective and inexpensive technique of stress relief.

Diaphragmatic Breathing:

Diaphragmatic breathing is a sort of breathing exercise that strengthens the diaphragm, which is the primary muscle involved in breathing, accounting for 80% of the total. Diaphragmatic exercises help people feel calm and refreshed.

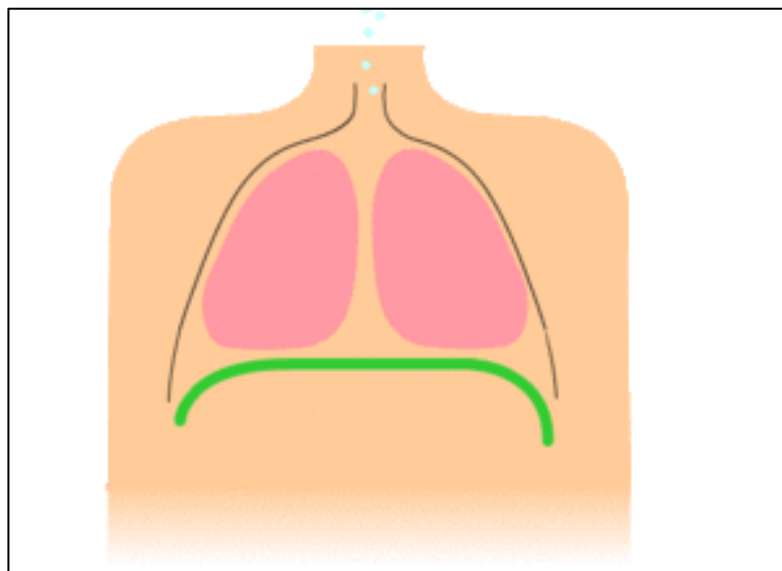


Figure 1.2: Diaphragmatic Breathing

This breathing practice is also known as belly breathing or abdominal breathing.

Technique:

- Position the patient in a gravity-assisted position, such as semi-fowler's position.
- Focus on the diaphragm by placing one hand on the chest and the other on the stomach. Take a calm, deep inhale while paying attention to which hand moves. During diaphragmatic breathing, the stomach hand should move the most.
- Slow breathing by inhaling fully and slowly exhaling. Breathing out through the nose might assist in regulating exhalation rate. Pause briefly after exhaling, then inhale again. [9]

1.5 Pursed Lip Breathing:

Pursed-lip breathing is a breathing method that involves exhaling through tightly pressed (pursed) lips and inhaling through the nose with the mouth closed. It is a useful technique for slowing down breathing and increasing exhalation time, allowing more air to be exhaled with each breath cycle.

This approach has been shown to aid persons with obstructive lung illnesses, such as chronic obstructive pulmonary disease (COPD) and asthma, which cause dyspnea during exercise.

Box Breathing:

Box breathing might be useful for relaxation. Box breathing is a breathing exercise that can be used to help people manage stress and can be done before, during, or after stressful events.

Box breathing is imagining a journey around the four corners of a square, resting while moving horizontally and breathing in while ascending the square and out while descending it. This practice is adaptable to a variety of settings and does not require a peaceful environment to be effective. [10]

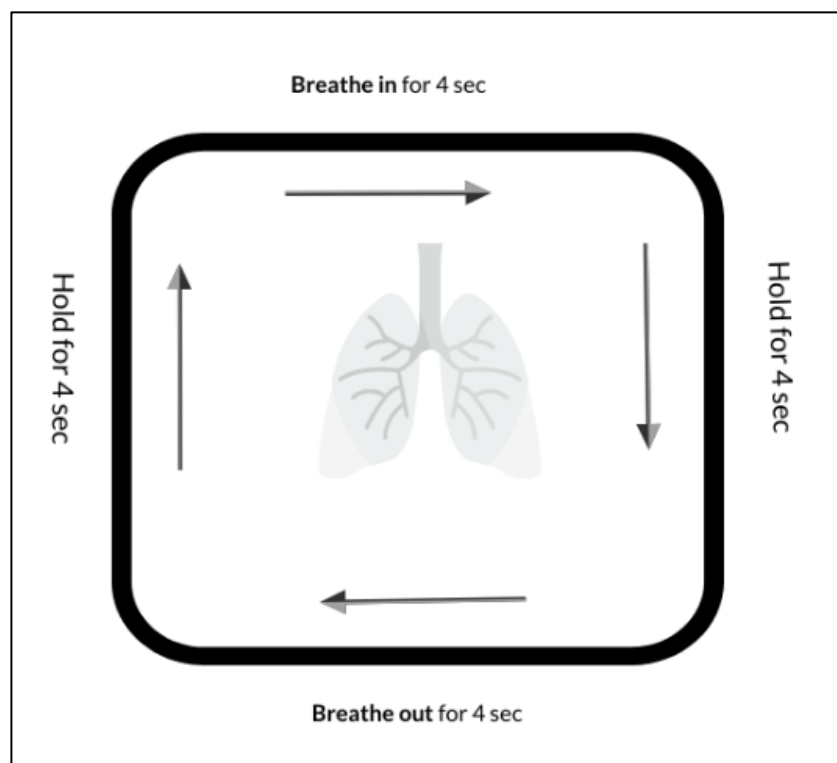


Figure 1.3: Box Breathing (Source: <https://www.physio-pedia.com/>)

- Step One: Breath in through the nose for a count of 4.
- Step Two: Hold your breath for a count of 4.
- Step Three: Breath out for a count of 4.
- Step Four: Hold your breath for a count of 4.
- Repeat

1.6 The Benefits of Deep Breathing Exercises:

Draw a deep breath. And another, and another, and another. Everyone can do this workout, which is the easiest part! While we take breathing for granted, it's crucial to remember that doing it wrong can cause a range of issues, including rapid heartbeat, low blood oxygen levels, and dizziness. Given that breathing is free and effortless, devoting time to doing it correctly and deliberately is rewarding.

So, how does diaphragmatic (or "belly") breathing aid us in our daily lives? Belly breathing is when we take deep breaths to transport oxygen from the chest to the belly.

Deep breathing promotes both physical and mental health by reducing stress, increasing confidence, circulating blood throughout the body, and removing toxins.

[11]

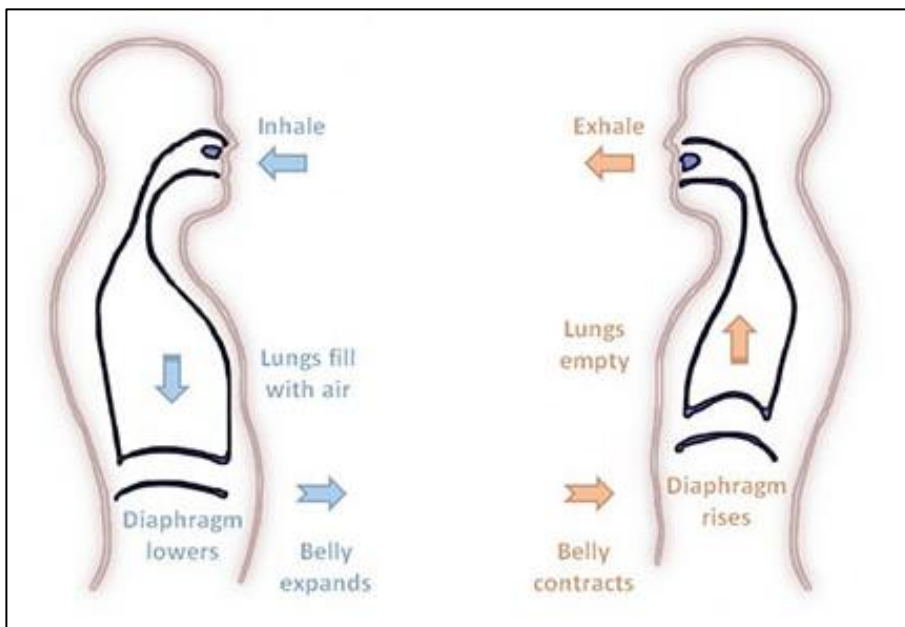


Figure 1.4: Deep Breathing Exercises (Source: www.thewealthconservancy.com)

Here are some of the benefits of deep breathing:

A. Detoxification:

Breathing is a mechanism utilized by our bodies to eliminate pollutants. When we inhale and exhale deeply, we allow the body to release carbon dioxide as well as poisons ingested from the air, water, food, or germs.

B. Stress Reduction:

Medical study over the years has demonstrated that shallow breathing is common during fight-or-flight mode, often known as extremely stressful situations. By failing to realize the benefits of deeper breathing, we make ourselves more vulnerable to anxiety and panic episodes. By becoming conscious of our breathing, we allow our bodies to fill with oxygen, releasing tension and restoring normal heartbeats, resulting in peace and comfort.

C. Increased Energy:

Proper breathing practices take more air into our lungs, increasing blood flow. Improving blood oxygenation links with improved metabolism, enhanced energy, and revitalized organs, all of which influence how our bodies distribute energy and break down molecules.

D. Improved Digestion:

As we all know, when the body receives more blood, all of its organs, including the digestive system, begin to function better. Improved oxygenation detoxifies and energizes our system, resulting in better digestion and appetite.

E. Regulated Weight:

Deep breathing can help people who want to gain or lose weight. If you are underweight, deep breathing will increase the oxygen flow to your body's tissues and cells, allowing them to develop stronger.

If you are overweight, deep breathing can help you lose weight by providing the oxygen required for processes that break down fat into energy. An intriguing fact: when you breathe shallowly too frequently, the body will use glycogen rather than fat as a fuel source.

F. Improved Mood:

Deep breathing can assist enhance your mood by increasing neurochemical production in the brain, resulting in more pleasure and contentment. These sensations of contentment and relaxation lead to an increase in dopamine.

G. Improved Heart Health:

You've most likely had this experience without completely knowing what was going on. When you start taking deep breaths, your heart rate will drop to a normal level. The lungs have strengthened, and by increasing blood oxygenation, the stress on the heart is reduced, lowering its rate. [12]

1.7 Conclusion:

Deep breathing is one of the most effective techniques to reduce stress in the body. This is because deep breathing signals your brain to quiet down and relax. The brain then transmits this information to your body.

Stress-related symptoms such as elevated heart rate, rapid breathing, and high blood pressure diminish as you breathe deeply to relax. Deep breathing involves gently inhaling through the nose and exhaling through the mouth, utilizing the diaphragm (the thin muscle that separates the chest from the abdomen) and abdominal muscles.

This helps to increase the amount of oxygen in the blood, lower blood pressure and pulse rate, and relieve muscle tension.

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