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LEARNING | GROWING | ADVANCING | TOGETHER

2026

AAOHN NATIONAL CONFERENCE



ORLANDO, FLORIDA

ROSEN SHINGLE CREEK

2026

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Disclosures

Accreditation statement: The American Association of Occupational Health Nurses, Inc. (AAOHN) is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

Contact hours: 1.0

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The Physiology of Calm

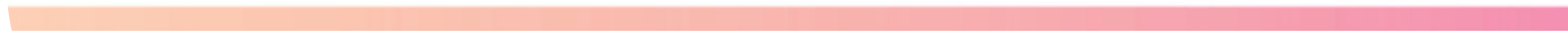
Integrating Breathwork and Mindfulness into
Occupational Health Clinical Practice

Lynn Camera RNC, CNRN, HC





Take a deep breath...



Learning Objectives

Physiological Effects of Breathwork

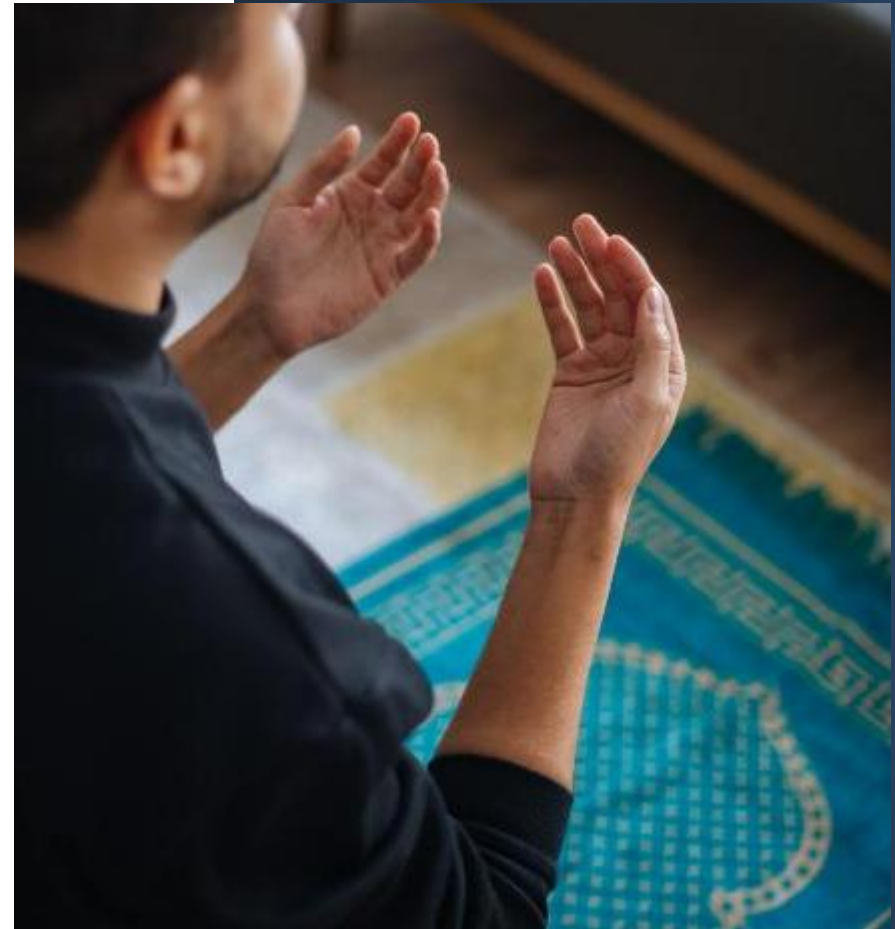
Participants will explain how breathwork impacts the nervous system and reduces workplace stress and injury.

Evidence-Based Techniques

Learners will identify three proven breathwork techniques and demonstrate at least one in practice.

Clinical Integration and Benefits

Participants will integrate breathwork coaching in patient simulations, discuss benefits for work environments, and evaluate implementation barriers.

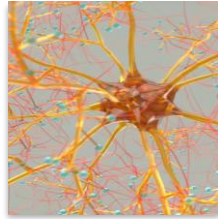


So how and why does this simple technique bring such big impact?

Let's look at the neuroscience science behind breath

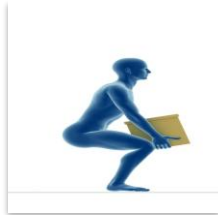


Autonomic Nervous System Basics



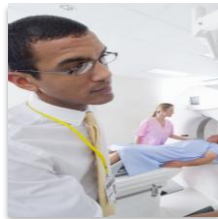
Involuntary Body Functions

The autonomic nervous system regulates vital functions like heart rate, digestion, and breathing without conscious control.



Sympathetic and Parasympathetic Branches

This system has two branches: sympathetic for stress responses, and parasympathetic for relaxation and recovery.



Automatic Organ Regulation

The autonomic nervous system keeps vital organs functioning smoothly, allowing the body to operate efficiently without constant thought.

Vagus Nerve: Autonomic Key

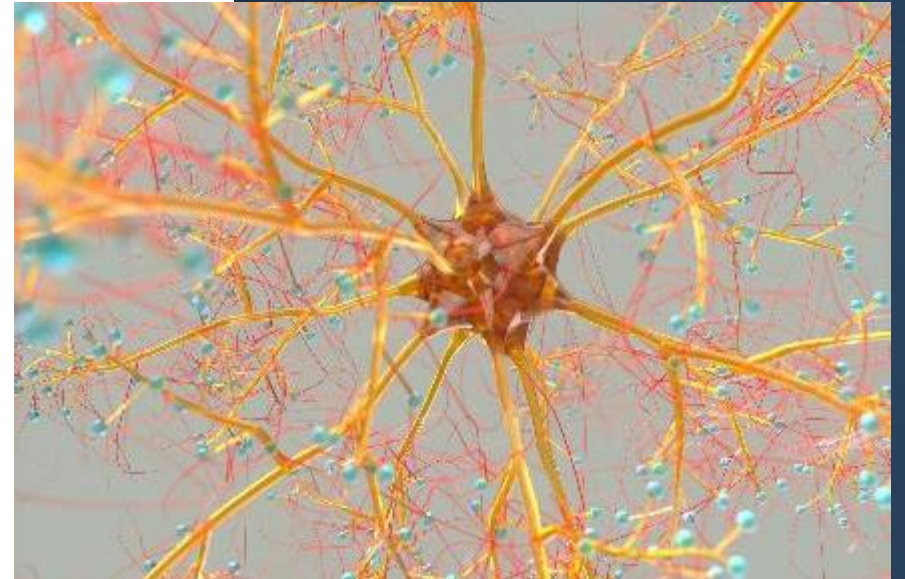
Regulation of Vital Functions

The Vagus nerve controls heart rate, digestion, and respiratory rate, supporting essential body functions for survival and health.

Communication Between Brain and Organs

The Vagus nerve is the longest cranial nerve in the body-acting as a communication highway, This nerve stretches from the brainstem through the neck and chest and innervates major organs in the abdomen including the diaphragm.

The Vagus nerve links the brain to internal organs to maintain homeostasis.



Bottom-Up Signaling Explained

Vagus Nerve Detection

The vagus nerve senses physical states like heart rate, breathing, and gut sensations, enabling interoception.

Information Relay to Brain

Signals from the vagus nerve are sent to the brain, helping it monitor and interpret bodily conditions.

Impact on Emotions

These bodily signals can strongly influence emotional experiences and responses, shaping how we feel.



How Reactions Are Formed

Initial Sensory Responses

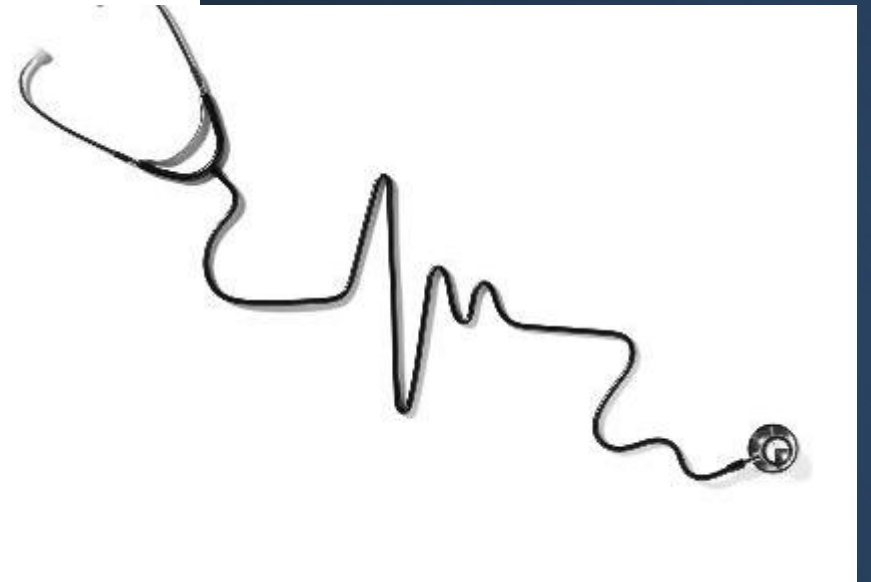
Reactions start with raw sensory emotions involving heart rate, body temperature, energy, and muscle tension.

Interpretation by Experience

Past experiences and conceptual knowledge shape our physiological responses, helping us interpret the situation.

Constructed Response

Our final reaction is a constructed combination of physical sensations and personal context.



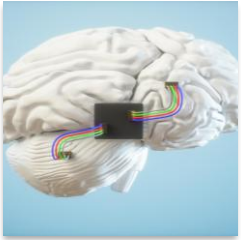
Breathwork & Mindfulness

Enhances Vagal tone

Shifts Physiology
toward
parasympathetic
regulation

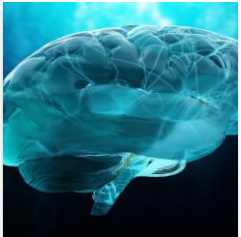
Outcomes: ↓
sympathetic arousal |
↑ emotional
regulation | ↑
cognitive clarity

Brain-Body Emotion Loop



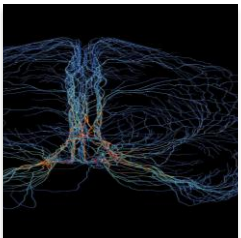
Amygdala Detects Threats

The amygdala identifies potential threats and triggers emotional responses, playing a central role in stress and fear.



Pre-Frontal Cortex Regulates Emotion

The pre-frontal cortex manages emotional impulses, helping us control reactions and make thoughtful decisions.



Vagus Nerve Links Brain and Body

The vagus nerve connects the brain and body, moderating stress responses and promoting emotional balance.

The amygdala, pre-frontal cortex (PFC) and vagus nerve form a bidirectional communication loop regulating emotion and stress

Amygdala Regulation

Vagus Nerve Stimulation:

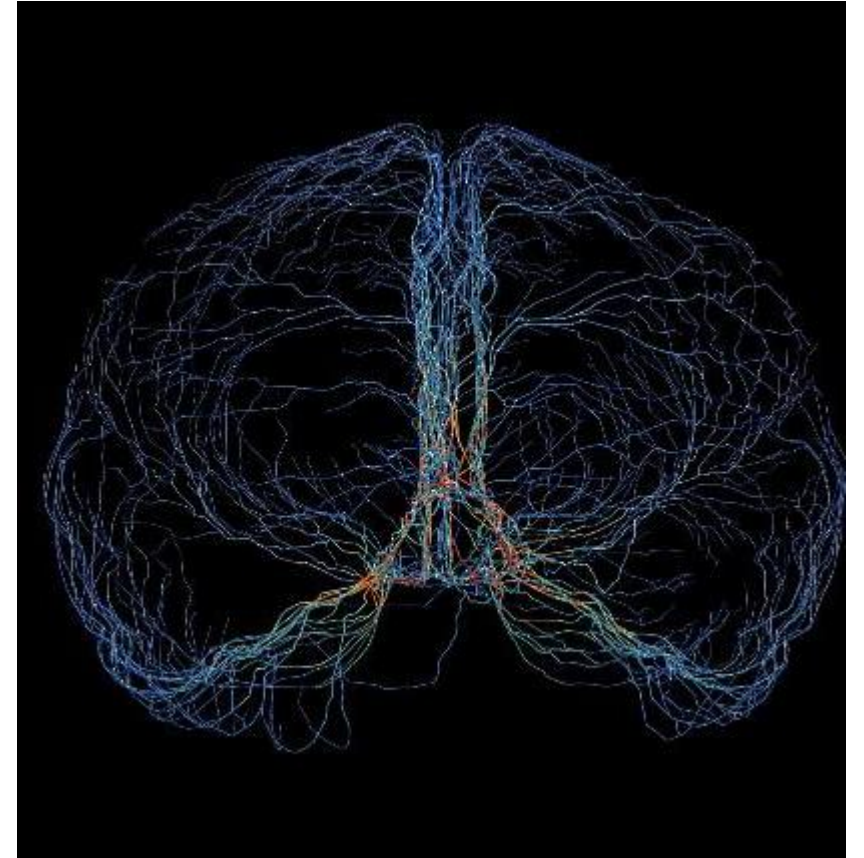
Vagus nerve stimulation helps regulate the amygdala, decreasing hyperactivity and reducing excessive fear responses for improved emotional balance.

Norepinephrine Release:

Stimulation of the vagus nerve increases norepinephrine release, supporting memory consolidation and emotional regulation related to fear.

Therapeutic Potential:

Vagus nerve stimulation offers promising treatments for anxiety and stress disorders, improving mental health and emotional resilience.



Prefrontal Cortex Regulation

Vagal Feedback Mechanism

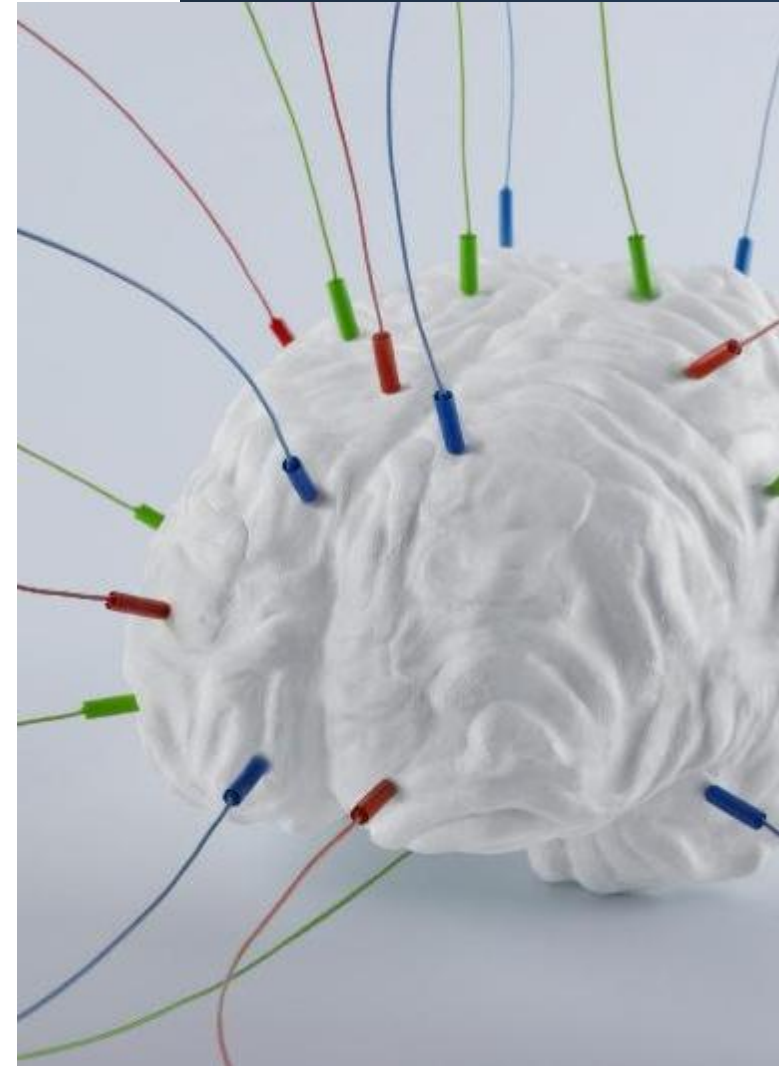
The prefrontal cortex uses vagal nerve feedback to regulate emotional responses, controlling them from the top down.

Connectivity and Emotional Regulation

Enhanced vagal tone improves connectivity between the prefrontal cortex and amygdala, aiding emotional regulation.

Mental Health Benefits

Stronger prefrontal-amygdala connection via vagal tone can reduce anxiety and support mental health.



Vagus Nerve: Stress Relief

Activation of the Vagus Nerve

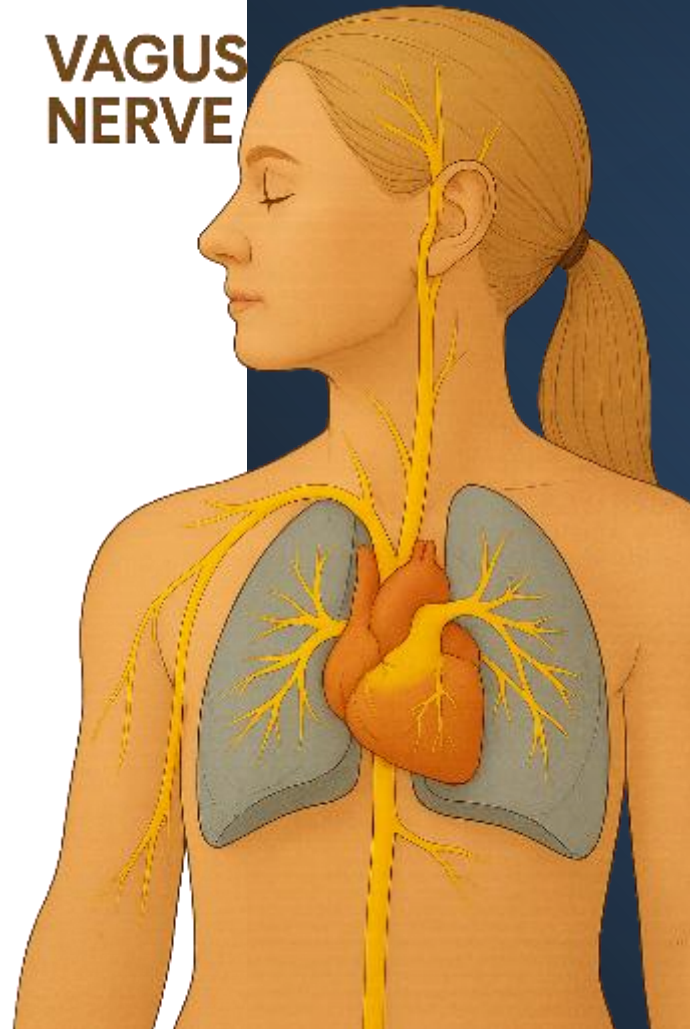
The brain stimulates the vagus nerve during stress, triggering the parasympathetic nervous system to restore calm.

Counteracting Fight-or-Flight

The parasympathetic system opposes the fight-or-flight response, encouraging relaxation and aiding physical recovery.

Restoring Body Balance

Activation of the vagus nerve slows heart rate, resumes digestion, and returns the body to a balanced state.



INTRODUCING BREATHWORK FOR WORKPLACE WELL-BEING

Breathwork involves conscious control of breathing patterns to influence physical, mental, and emotional states. Integrating these simple yet powerful techniques into occupational health practices can significantly uplift employee well-being.



Physiological Effects of Breathwork

Breathwork activates the parasympathetic nervous system, leading to physiological changes such as lowered heart rate and reduced blood pressure. These effects promote a state of relaxation and can enhance overall well-being.



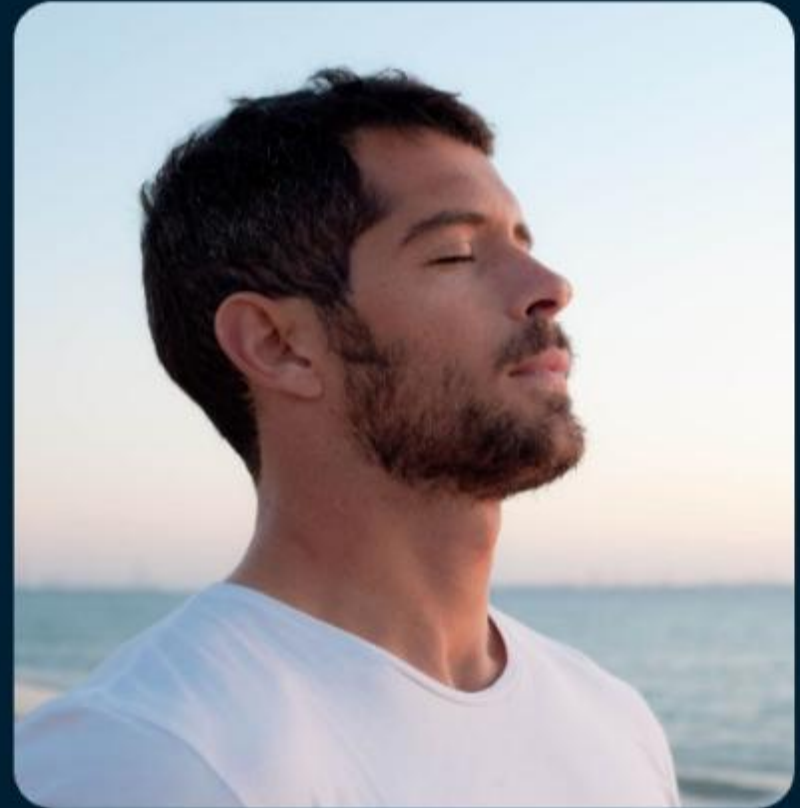
Psychological Benefits

Engaging in breathwork can decrease symptoms of anxiety and depression, providing psychological relief. It fosters a sense of connection with oneself and can enhance mindfulness and presence.



Impact on Emotional Regulation

Breathwork helps to regulate emotional responses by promoting awareness of bodily sensations and feelings. This process enhances emotional regulation, allowing individuals to respond rather than react to stressors.





Breathwork acts as a manual override, shifting the state of the nervous system by influencing brain-body communication.

Vagus Nerve Activation

Breathwork mechanically stimulates the vagus nerve, which supports relaxation and a sense of calm in the body.

Synchronization of Heart and Breath

Breathwork synchronizes breathing with heart rhythms, creating a state called respiratory sinus arrhythmia for optimal regulation.

Emotional Regulation Benefits

Breathwork calms the amygdala, reduces stress, and strengthens the pre-frontal cortex for better emotional control.

Taking a deep breath: Why does this work?

Taking a deep breath can significantly reduce vagus nerve stimulation by activating the parasympathetic nervous system .

This process involves the diaphragm moving downward allowing the lungs to fully expand

As a result-the vagus nerve sends signals to the various organs signaling them to slow down and entering a more restful state.

This relaxation response reduces stress, lowers blood pressure , reduces heart rate and improves digestion.

Additionally-longer exhales can further enhance vagus nerve function and improve heart rate variability which is associated with better overall health and improved cognition.



Simple Breathwork Techniques

Diaphragmatic Breathing

This technique emphasizes deep belly breaths to promote relaxation and reduce stress, supporting mental and physical well-being.

Box Breathing Pattern

Box breathing involves a four-part pattern of equal counts for inhale, hold, exhale, and hold to increase focus and calm.

4-7-8 Breathing Method

Inhale for 4 seconds, hold for 7, exhale for 8. This slows heart rate and promotes deep relaxation.



Diaphragmatic Breathing

BREATHWORK TECHNIQUE 1 OF 3



How to Practice

1. Sit or lie comfortably with one hand on your belly
2. Inhale slowly through the nose, letting the abdomen rise fully
3. Exhale completely through the mouth, feeling the belly fall
4. Repeat for 3–5 cycles at any point during the shift

Clinical Benefits

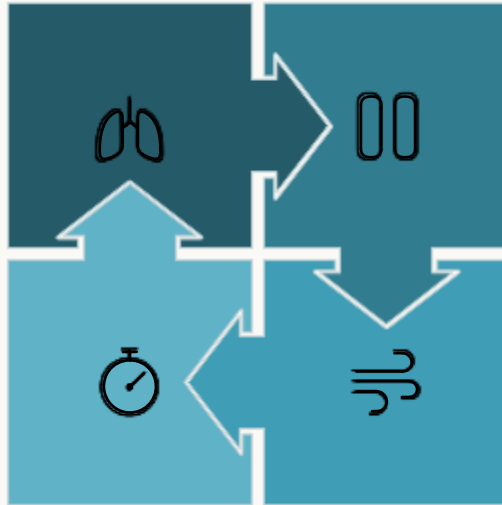
- Lowers cortisol and reduces physiological anxiety response
- Improves oxygenation and mental clarity
- Can be practiced silently during breaks or before high-stakes tasks

Quick Tip: Just 60 seconds of diaphragmatic breathing can measurably shift autonomic tone.

Box Breathing

BREATHWORK TECHNIQUE 2 OF 3

Inhale 4s



Hold 4s

Hold 4s

Exhale 4s



Equal-Ratio Breath Regulation

Box breathing imposes a **predictable, structured rhythm** on the nervous system – breaking the stress-breath feedback loop.

- Adopted by **Navy SEALs** and elite performers for composure under pressure
- Enhances **heart rate variability (HRV)** – a validated biomarker of autonomic resilience
- Effective mid-shift or before high-pressure clinical encounters

📌 **Practice Support:** Visual timer apps (e.g., Breathwrk, Calm) can guide consistent pacing without mental effort.

4-7-8 Breathing

BREATHWORK TECHNIQUE 3 OF 3



1

Inhale — 4 Seconds

Quiet nasal breath, gently expanding the chest and belly

2

Pause — 7 Seconds

Pause the breath, allowing oxygen saturation to build and the nervous system to settle

3

Exhale — 8 Seconds

Long, slow release through the mouth – activating the parasympathetic brake

The extended exhale is the active mechanism: a prolonged out-breath directly stimulates the vagus nerve. **Evidence shows significant reductions in anxiety and improved sleep quality** – ideal for post-shift recovery and acute stress moments.

Barriers to Breathwork Integration

Lack of Training and Confidence

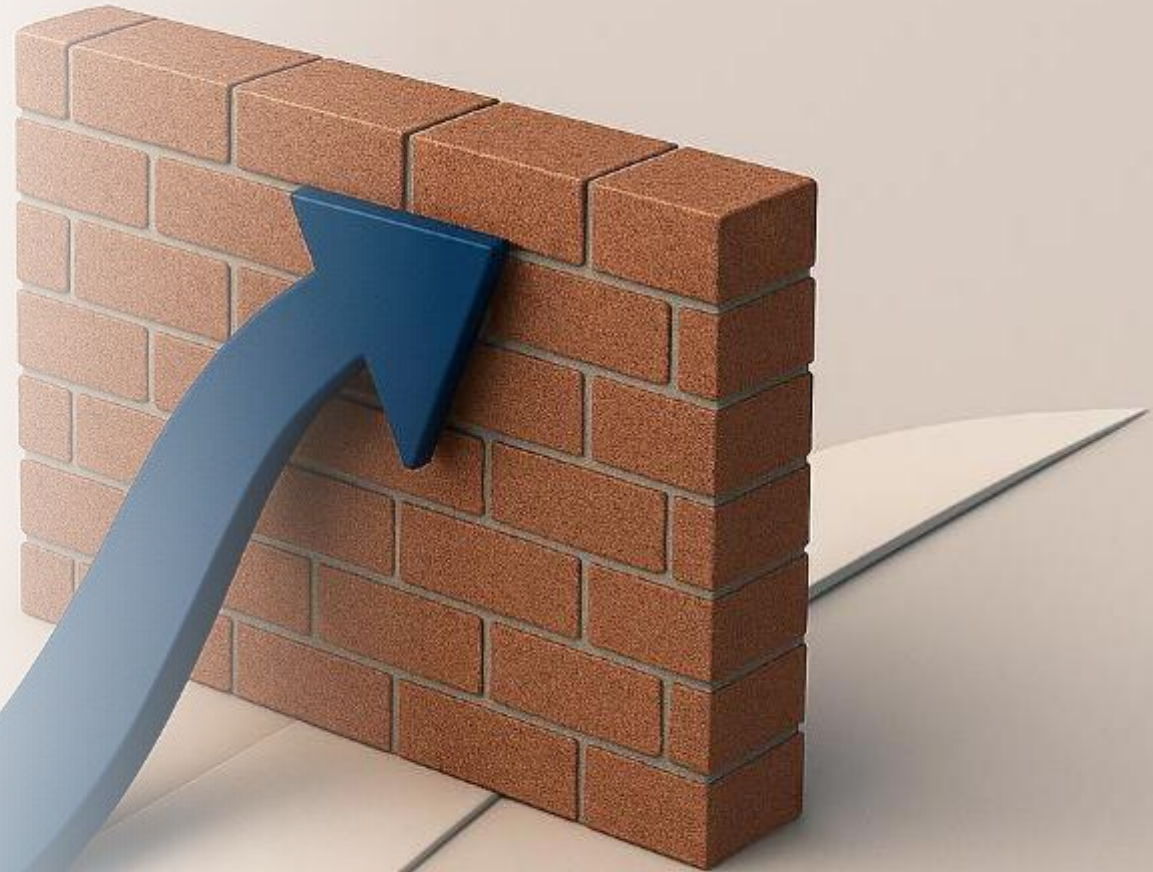
Many healthcare professionals do not have formal training in breathwork, leading to low confidence in using these techniques effectively. Practices are often based on approved SOP's and clinically based first-aid practices.

Limited Employer Support

Many workplaces have little awareness or support for breathwork, which reduces the likelihood of new practices being adopted.

Structural and Cultural Barriers

Rigid work schedules, cultural skepticism, and individual attitudes can make it difficult to implement and accept breathwork practices.



INVEST IN EMPLOYEE RESILIENCE

Incorporating breathwork is a low-cost, high-impact strategy for fostering a healthier, more productive, and resilient workforce. Empower your employees with tools for self-regulation and sustained well-being.



Engagement Strategies

Employer:

- Present the “business case”: Frame breathwork as a tool for sustainable performance rather than a soft benefit. Highlight the benefits to employees and for the company as a whole.
- Integrate into safety programs and orientations.
- Secure leadership buy-in and encourage active participation by managers and executives.

Employees:

- Provide education and awareness
- Make it accessible and simple-teach simple techniques during visits
- Allow them to see benefits in real time-make it practical-not extra work

Occupational Health Professionals:

Explain the medical and scientific rationale for incorporating breathwork into routine health practices.

POSITIVE IMPACT ON THE ORGANIZATION

Driving Performance and Employee Retention

25%

Potential reduction in stress-related absenteeism.

15%

Improvement in employee engagement and morale.

10%

Decrease in healthcare costs related to stress and burnout.

Up to 20%

Boost in overall workforce productivity and focus.

KEY BENEFITS FOR EMPLOYEES



Reduces stress and anxiety, fostering a calmer work environment.



Enhances focus and concentration, leading to improved productivity.



Supports emotional regulation and resilience against daily pressures.



Contributes to better sleep, energy levels, and overall physical health.

Syncopal Episodes Case Study

Initial Patient Assessment

34-year old male with no known medical history and recent onset of syncopal episodes at home and at work. A thorough history and physical examination were performed in office and by PCP.

Electrocardiogram for Cardiac Causes

Electrocardiogram and halter monitoring was performed by provider to rule out cardiac etiologies. EE was also hospitalized after a syncopal episode at an outside business.

Neurological and Orthostatic Evaluation

Neurological assessment and orthostatic vital signs were performed.

Diagnosis: Vasovagal Syncope possible induced by stress

Breathwork and Vagus nerve stress reduction techniques were reviewed with EE and incorporated into his daily healthcare routine.



Medtronic

Engineering the extraordinary

Practicing Presence

Simple tools for staying focused, calm, and safe

Ryan Davis, IIPS, PA-C, CEAS, FMS



Practicing Presence

Simple tools for staying focused, calm, and safe

Why Presence Matters?

When you're present, you're safer, more effective, and less stressed

- Assembly line work demands **precision** and **focus**
- Being distracted can lead to **mistakes**, **injury** or **fatigue**
- Practicing presence helps protect **you**, your **team**, and the **patients** who rely on what you build



Practicing Presence

Simple tools for staying focused, calm, and safe

What is Presence?

It's not just "paying attention"

Presence means being:

- **Aware** of your body and breath
- **Focused** on the task at hand
- **Grounded** – not lost in worries, anxiety or rushing thoughts

You don't need to meditate for 30 minutes – you can practice presence **in seconds**



Practicing Presence

Simple tools for staying focused, calm, and safe

Micro-Practices for Presence (You can do it on the line)

1. One Deep Breath – Sigh of Relief
- Before a new task or when feeling off – **one deep inhale and slow exhale**

2. Feel Your Feet
- Briefly pause and notice: **Are your feet flat? Weight balanced?**

3. Name One Thing
- Silently name one thing you see or hear in the environment around you.
- **“I see the bin of parts”**
- **“I hear the hum of the machines”**

the This grounds your awareness in present



Practicing Presence

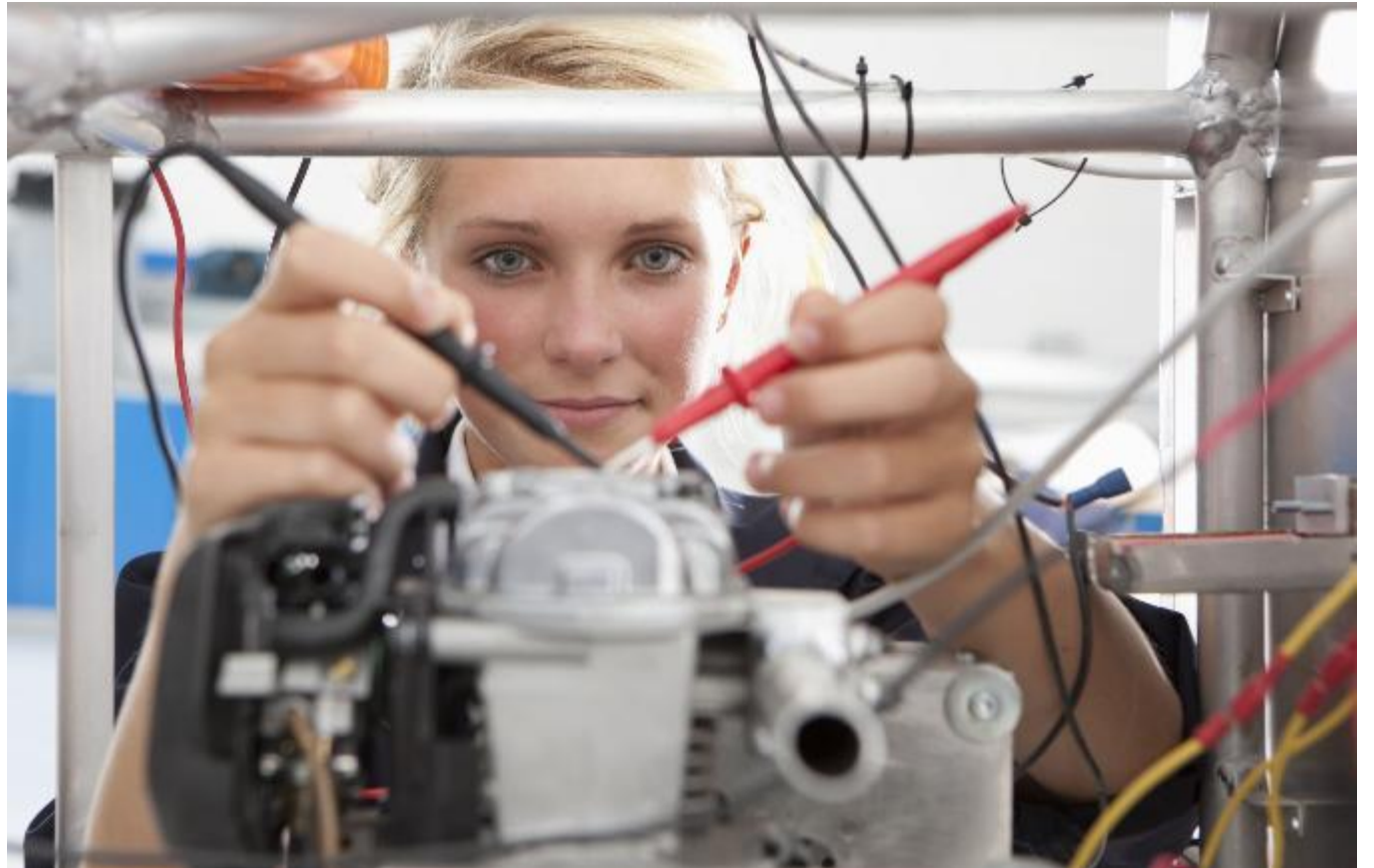
Simple tools for staying focused, calm, and safe

Presence Protects Performance

You don't need more time –
you need more **awareness**

A few seconds of presence
can **shift your whole day**

Try one of these tools today
– and notice the difference



MINDFUL MAY: did you know that MAY is the month when North Haven historically has the most employee injuries!

Mindful May



WORK SAFELY!

Don't forget to be Mindful in May!

- Be aware of your surroundings to prevent a Slip, Trip, or Fall.
- Remember the 4 D's! If something is DUMB, DIFFICULT, DANGEROUS or DIFFERENT – stop the task and alert your supervisor immediately!
- Before you begin any activity, decide to make safety your first priority!

We need your help to KEEP EVERYONE SAFE!

Integrating Breathwork & Mindfulness



Leadership Education

Educate leadership on the benefits of breathwork and mindfulness for employee well-being to ensure top-down support.

Staff Training

Train occupational health staff to teach and model breathwork and mindfulness techniques for employees.

Pilot Micro-Interventions

Introduce short mindfulness and breathwork sessions during work hours to test effectiveness and encourage adoption.

Sustainable Practice Integration

Incorporate breathwork and mindfulness into daily employee routines, using feedback and health metrics for continuous improvement.

Unlocking Workplace Calm



Calm as a Physiological State

Calm is rooted in the body's physiological responses, not only in our thoughts or emotions.



Breathwork for Workplace Wellness

Breathwork is an effective tool to improve performance, morale, and reduce workplace injuries by supporting mental and physical wellness.



Wellness-Focused Occupational Health

Occupational health can lead culture change with a focus on optimizing safety and overall well-being, shifting towards proactive rather than reactive wellness.



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