

Optimal Breathing Pattern

Webinar - January 2025 - Presenter:

Understanding & Applying Optimal Breathing Patterns

We come into life on one breath and on one breath we will leave on one breath. Respiration is the very essence of who we are, yet it's often overlooked as an automatic process and less understood as a facet of our health and performance.

The Science of Breathing

- **Biomechanics:** Optimal mechanics of breathing involves a 360° circumferential movement of the rib cage to optimize the capacity of your diaphragm.
- **Biochemistry:** With controlling the turbulence of your breathing we can positively alter the chemical balance in your blood, increasing oxygen delivery and facilitating better energy and focus.
- **Psychophysiology/Presence:** Your breath is being constantly assessed by your brain to whether your nervous system needs to react to the environment with a stress response or can relax. By simply slowing our breathing to a 4 second inhale and 6 second exhale with a momentary pause after exhale. We can calm the mind, be more resilient, harness our stress responses, and improve overall mental focus.

Why It Matters Breathing influences everything from cellular respiration to emotional regulation. By mastering optimal breathing techniques, you can enhance physical performance, boost cognitive function, and improve resilience against stress.

The Foundation of Optimal Breathing Patterns

- **Keep it Nasal.**

The importance of nasal breathing as your main way of respiration can not be overemphasised to optimize blood gas levels (Oxygen, CO₂) the utilisation of Nitric Oxide and the optimal function of your nervous system.

CO₂ is the main driver of respiration and your red blood cells need the presence of CO₂ to release the oxygen to your tissues and cells.

Carbon Dioxide and Nitric Oxide act as vasodilators allowing a greater oxygen exchange to take place in the lower lung (alveoli). Our ability to breathe slower, lower and softer is directly related to our tolerance to CO₂.

When we are more tolerant to CO₂ breathing is smooth, relaxed and undetectable. Nasal respiration activates the expansion our ribcage and will slow our breathing down naturally this greatly enhances oxygen delivery, lung volume, optimal diaphragmatic activation and nervous system balance.

Improving key metrics like HRV and promotes the foundation of optimal wellbeing for general life and greatly improves performance and recovery during physical exertion.

Practical Exercises for Biomechanical Improvement

Daily Breathing Practices

- **Exercise 1: Ribcage rediscovery and optimal diaphragmatic breathing: (5 -15 mins per day)**
 - **How:** Stand up straight and place your hands on your hips. Begin to walk and rub your hands up to find lowest ribs. Begin flossing rubbing your fingers back and forward in between each rib.

Tapping and palpating all around your upper abdomen where the diaphragm rests and around the back of the body between your ribs. This cues your brains awareness to this area. Close your eyes and breathe in slowly expanding air into the areas you brain can now sense until you can no longer take in more air. Slowly

exhale and using your hands compress your ribs down and in towards your belly button. Smile and repeat 10 repetitions.

- **Why:** Expands lung capacity and parasympathetic dominance, improves the health of your internal organs, builds flexibility and strength of the intercostal muscles, obliques and diaphragm.
- **Application:** Do this exercise twice daily to enhance oxygen efficiency, improve posture and increase lung volume.

Biochemical and Psychophysiological Enhancements

Optimising Biochemistry and Psychophysiological Balance

- **Exercise 1: (LSB) Light, Slow Breathing - Seated. (5 – 15 mins per day)**

- **How:** Become aware of the turbulence of your breath in and around the nostrils. For 2 breaths increase the pressure flow and turbulence of your inhale and exhale (loud huh). We now want to progressively reduce that turbulence making sure not to restrict the breath, allowing full slow inhalation and slightly exhale out your nose. Reduce turbulence so much so you could balance a feather under your nose and it wouldn't move. Naturally your respiration will begin to reduce the volume of air you're bringing in. You may notice a slight discomfort or urge to take a bigger breath in.. This is a good sign that you are beginning to train your chemoreceptors to be more tolerant to CO₂. Remain calm and continue to just focus on the temperature coming in on the inner walls of the nostril and the outer rim as you exhale.

If this becomes overly stressful or challenging just return to regular breathing for 20 seconds or so and then begin to slowly once more lighten the turbulence and reduce the pressure of air flow in and out in your breath. As you begin to feel more comfortable here allow a small pause of 1-3 seconds after your exhale. You will reap the benefits of improved CO₂ tolerance.

- **Why:** The technique helps rebalance your body's biochemistry to better manage breathlessness, train resilience and calm in the face of challenges, and promote relaxation.

This in turn will improve the foundation of your health for physical and mental performance whilst developing a balanced nervous system.

- **Application:** Useful as a daily practice to train focus and promote greater levels of health and wellbeing. Can be practiced easily whilst doing daily activities.

With practice we can use breathing strategies to maintain calm and clarity in high-stress situations such as meetings or public speaking. We can experience increased calmness, better stress management, and more effective physical performance.

For more information or a more in depth explanation of optimal breathing patterns for health, follow my Instagram or email me for further questions.

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