



Hello all,

Welcome to Volume 1, Issue 6 Of Coherent Breathing: *A Matter Of Consciousness - Part 2*. I last wrote about this topic in [Volume 1, Issue 5](#), published on January 1st, 2019. We've been working on the new www.coherence.com site since then, now up and running.

There is a great deal of interest around the world in “conscious breathing” – being conscious of our breathing throughout the day, managing our breathing vs. letting it manage us. This is a key principle of Coherent Breathing – we train it regularly for 20 minutes per day for 3 weeks and then we devote a small portion of our consciousness to it all the time throughout daily life, circumstances permitting.

In this article I offer a hypothesis: *This being that conscious breathing is necessary for consciousness itself to flourish*. A number of famous books have been written about the cultivation of “habits”. I recently heard a popular figure speak on this topic, after which I felt somewhat dismayed. The argument being made is that we are creatures of “habit”, and that we can change our lives for the better by modifying our habits and building better ones.

I take exception to the underlying principle. The contemporary understanding of “habit” is something that we do automatically, unconsciously, maybe being aware and maybe not. Here I argue that it is the province of humanity to live “consciously”. Without splitting hairs over terminology, our choices are being awake, aware, conscious, and purposeful in our actions vs. day dreaming through life allowing habits (engrained patterns) to determine what we do, largely without presence of mind – where phones have largely captured our consciousness, even worsening the situation. I do acknowledge that the act of changing a habit requires awareness and purpose, so it is a step in the right direction.

Now, here is a question: *Is it possible to be awake, aware, conscious and purposeful in everything we do if we are not breathing with depth and rhythmicity?* For me personally, the answer is “No.” It is only after I learned to breathe “coherently” that I learned to “self-govern” to the extent that I now know possible. Here I refer to daydreaming and quieting the internal dialog that goes with it. I had worked long and hard on these matters via meditation for several decades but without breakthrough. I love music but stopped listening to it for 10 years in order to prevent it playing in my mind. Now I can listen to music and it doesn't play in my mind. So how might breathing coherently yield such an advantage? Per [The New Science Of Breath](#), breathing coherently brings us out of sympathetic emphasis where the body is relatively tense and the mind chatters, into a state of balance where muscles relax and the mind can become still. Why might this be?

My current thesis is that these positive outcomes accrue from “the wave in the brain”, where when we are upright and not breathing with depth and rhythmicity all the brain experiences in terms of blood flow is the heartbeat. When we breathe so as to produce the Valsalva Wave, amplitude of the blood wave at the head and in the brain doubles, flushing the brain with blood during every exhalation and withdrawing blood from the brain during every inhalation, thereby keeping blood in the brain moving and refreshed with a larger volume of oxygenated blood than if the brain experiences blood flow from the heartbeat alone. During our *Search For The Wave In The Brain*, we discovered that when breathing coherently the brain produces large slow electrical waves that are ~10x the amplitude of functional bands: delta, theta, alpha, and beta. During a breath hold, these large slow waves flatline. One must examine these waves without low frequency filtering. In 2012 [The University of Rochester determined that blood flow in the brain also moves cerebrospinal fluid, cleansing the brain of interstitial solutes](#). Regarding functional waves, Dr. Elsa Baehr related to me that “You can see alpha amplitude increase with the first breath”. Why? Because that first breath generates that first wave. When that wave enters the brain electrical activity increases. But it is electrical activity that is consistent with autonomic balance, i.e. delta, theta, and alpha rise, beta and high beta diminish.

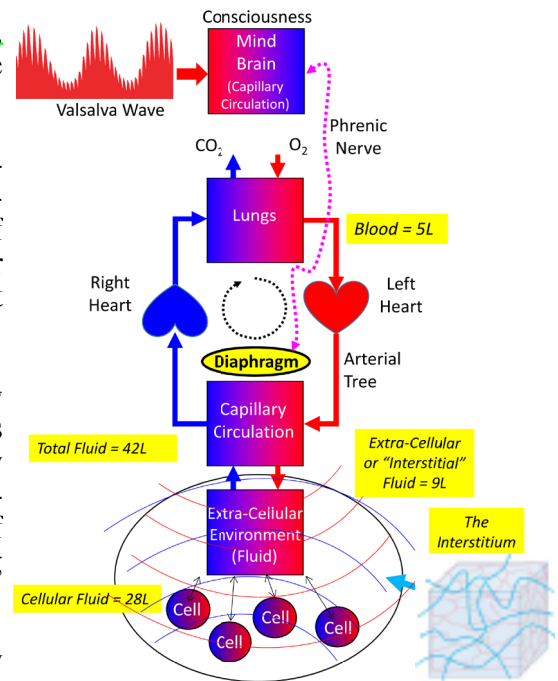


Figure 1: Diaphragm Control Is A Function Of The Phrenic Nerve, Both Sensory & Motor



If we instrument almost any biomeasure, when breathing rapidly and without rhythmicity we can see what amounts to nervous system chaos and noise. This noise causes low threshold muscle motor units throughout the body to be tense and it causes the mind to be noisy. These are symptoms of sympathetic dominance. When we breathe coherently, these biomeasures settle down, muscles relax and the mind becomes still. There is a perfect analog in electronic systems where noise reduces reliability, introduces errors, and limits information throughput. “Noise” in the nervous system diminishes as beta diminishes.



A positive feedback loop exists between breathing and the brain, this being a function of the Valsalva Wave. The brain asserts diaphragm control via the phrenic nerve, rhythmic diaphragm action generates the Valsalva Wave, the brain sees the Valsalva Wave rise and fall with a myriad of potential effects on brain state, potentially including the very ability to be conscious of our own breathing – what I posit to be the master key to conscious living in general. Once we *catch the wave*, we are capable of living in the now without distraction. What’s more? Once adopted, I have found Coherent Breathing and posture to be the foundational elements of yoga, meditation, and traditional Eastern martial arts, as explained in [Wuji Qi Gong & The Secret Of Immortality](#).

Figure 2: Coherent Breathing Valsalva Wave Trainer. Valsalva Wave Trainer Is For The Purpose Of Learning To Move The Diaphragm In A Sinusoidal Manner.

While I’ve been on a bit of a writing hiatus, we’ve also developed a new product, one that trains sinusoidality of diaphragm motion, or better said, one that trains sinusoidality of conscious use of the phrenic nerve to move the diaphragm in a sinusoidal fashion. The diaphragm wants to move sinusoidally, as this is the most efficient movement possible and it is free of noise generation. I learned of the significance of sinusoidal diaphragm motion during my research into Personal Resonance with the eventual writing of [Personal Resonance Protocol](#).

[Coherent Breathing Valsalva Wave Trainer](#) is an audio visual experience combining 4K video with 2 Bells. It is 60 minutes long and is compatible with hi def TVs that have USB ports. A line moves up and down at the nominal rate of 5 breaths per minute, the line representing the diaphragm. Practice involves pacing one’s inhalation and exhalation in synchrony with the line. 2 Bells plays along, the high bell occurring at the top and the low bell occurring at the bottom, inhalation and exhalation, respectively. The “snow” is meant to be a reminder of the action that is occurring across the capillary membrane as we inhale and exhale, e.g. the wave is moving fluid back and forth across the capillary membrane hydrating, cleansing and nourishing cells. Click here to experience the video. [Valsalva Wave Trainer](#) is shipped on a 16GB memory stick.

In summary, the importance of wave action in the circulation is coming into clear view. There is approximately 42L of fluid in the average adult body, but only 5L of that is blood. However the remaining fluid accounting for 37L exists on the other side of a fascinating barrier known as the capillary membrane. It is pervasive throughout the body and if layed end to end would stretch around the equator, incredible though it be. On the other side of the capillary membrane are billions of cells in which the majority of fluid in the human body exists estimated at 28L. (See Figure 1.) The remainder of fluid exists in the intercellular or “interstitial” environment. Last year, a big scientific announcement was made that the interstitium is now considered the largest organ in the body, as its mass wins over the skin which has held this 1st place for many years.

In summary, my argument is this: As erect beings, for our brains to function at full capacity we must employ our diaphragms. Being erect requires it because blood must work against gravity. Per my research, the diaphragm evolved in fauna with erectness. Humanity is endowed with the capacity for consciousness, but breathing with depth and rhythmicity is required to access it. Here I offer an admonition: Don’t be misled that the heart governs our state. When we are conscious our consciousness governs our state. Breathing to generate the wave in the brain is the means.

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