COHERENT BREATHING®

VOLUME 2, ISSUE 10 - JULY, 2023

Hello all,

Welcome to Coherent Breathing®, Volume 2, Issue 10, July 2023, ***Valsalva Wave Pro Demonstrating the Mayer Wave***. Following on the heels of Issue 9, Coherent Breathing operates at the frequency of .085 Hertz, the effective breathing rate being 5.1 breaths per minute. Figure 1 demonstrates one minute of Coherent Breathing followed by one minute of breath hold. During this first minute we see the Valsalva Wave (red graph) rise with each exhalation and fall with each inhalation. There are ~5 peaks during this period. Heart rate (blue graph) demonstrates the same periodicity but with characteristic near-180 degree phase alignment with the Valsalva Wave, this inverse relationship being a function of baroreception.

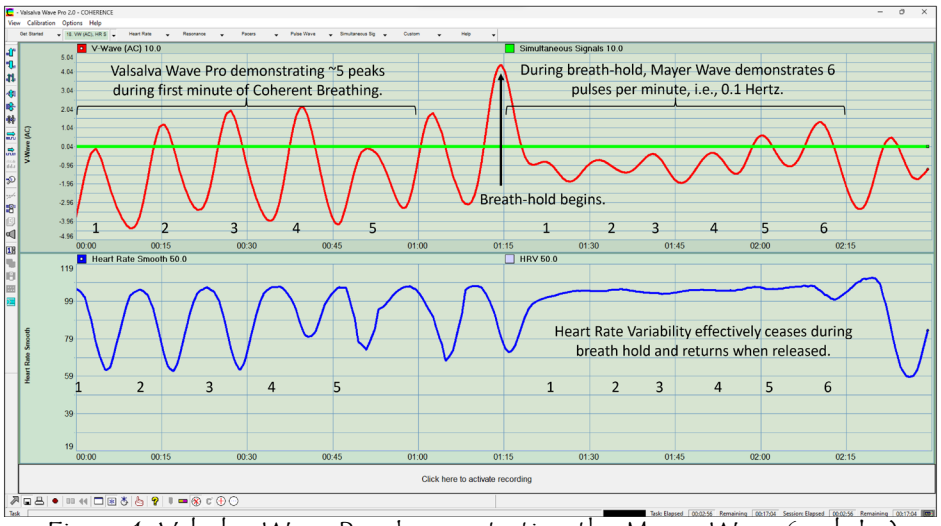

Figure 1: Valsalva Wave Pro demonstrating the Mayer Wave (earlobe).

The breath hold occurs at 01:15, where an exhalation is followed by a deep inhalation. During the hold we see the Mayer Wave rising and falling 6 times during 1 minute, the frequency being 0.10 Hertz. The amplitude is small in the beginning but increases as the breath hold continues. Heart Rate Variability (HRV) effectively ceases due to the absence of the Valsalva Wave circulatory component stimulating baroreception. The breath hold is released at approximately 02:20, where we see both the Valsalva Wave rise and heart rate fall. Note that the graphs demonstrate that Heart Rate or HRV lags slightly behind the Valsalva Wave by a few seconds, demonstrating the slight delay imposed by baroreception and resulting autonomic response.

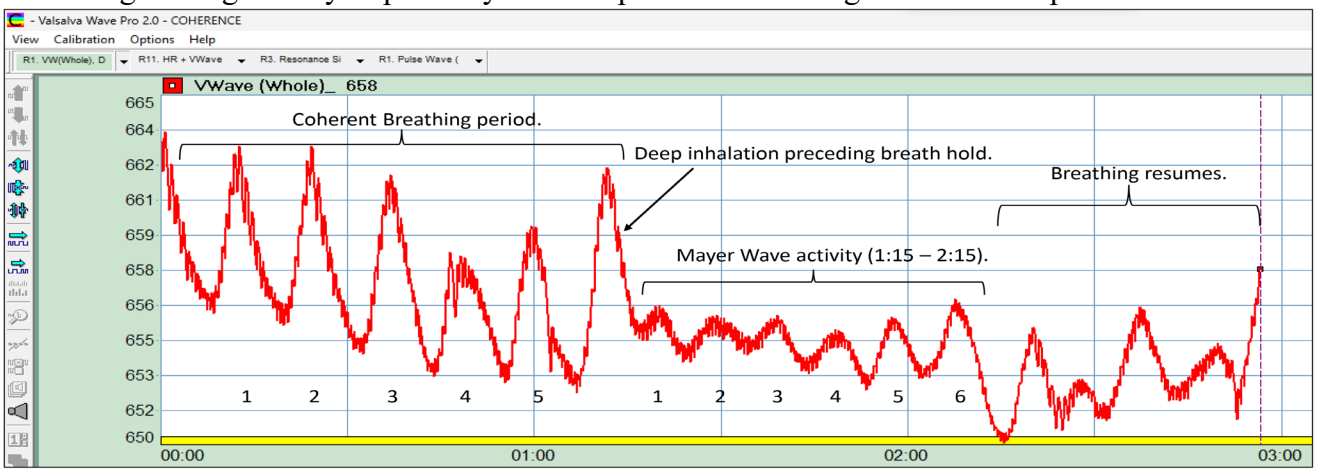

Figure 2: The "Whole Valsalva Wave" demonstrating Mayer Wave during breath hold (earlobe).

Figure 2 above is the raw unprocessed phenomenon of "the Valsalva Wave" where at 01:15 we begin seeing the Mayer Wave exclusively. Again, note that its amplitude is increasing as the breath hold continues, the imperative being the maintenance of blood flow in the arterial tree, in this case due to the cessation of breathing and absence of Thoracic Pump activity and its resultant Valsalva Wave contribution to circulation. During the Coherent Breathing period, we see the Valsalva Wave obscure Mayer activity. This raises the question of synchrony: Does the Mayer Wave (0.10 Hz.) synchronize with Coherent Breathing (0.085 Hz.)?

Stephen Elliott, President, COHERENCE LLC.

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