

Psychophysiological coherence: the heart of performance optimization

“By learning to control the heart, we can reclaim control of our emotions.”

-David Servan-Schreiber

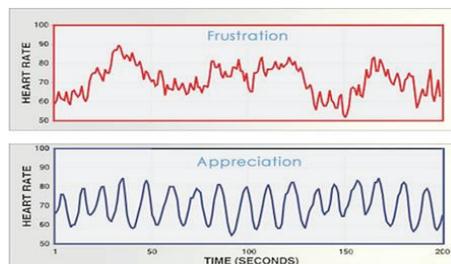
Numerous scientific studies have clearly demonstrated the link between the brain, heart rate and breathing.

Our previous Opinion introduced our personalized performance optimization program using biofeedback.

Today, we will focus specifically on one measure of biofeedback: psychophysiological coherence.

Unlike a clock, the human heart beats at an irregular rhythm. The pace accelerates when inhaling and decelerates when exhaling. The gap between heartbeats varies slightly, but steadily: this is heart rate variability. It can be erratic or regular.

In states of stress and strong emotions such as anger or anxiety, the variability becomes irregular and unpredictable (erratic).



In states of calm, it becomes regular and predictable (regular).

It is possible to learn psychophysiological coherence through breathing.

To do this, we must learn to relax and stabilize our breathing to around six breaths per minute. Complicated? No. A

biomarker (sensor) placed on the index finger collects data (e.g. heart rate) that is transmitted to a computer and translated into easily interpretable screens. These graphics allow us to view our coherence and thus, to modify it.

Managers and professionals, as well as elite athletes, are using this measure more and more to better manage stress, reduce anxiety and pressure, to reach optimum performance.

Happy reading!

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What is psychophysiological coherence

by Dr Jules Gauthier

In a stress management program, it is essential to use specific biomarkers to monitor progress. The results give a good reading of the state of stress of the individual and will help manage the progress towards stress control.

Some biomarkers:

1. Heart rate variability
2. Temperature
3. Skin conductance (sweaty palms)
4. Respiratory rate
5. Brainwaves
6. Muscle tension

These biomarkers provide a clear image of the reaction of the individual towards

various types of stress (cognitive, emotional, etc.). It is then easier to propose strategies tailored to each personal situation. Thus, we optimize the response and resilience of the individual to various daily stresses.

- It is important to see the interplay between these **biomarkers**.
- We already know that **breathing** influences **heart rate** and the heart directly influences the **brain**.
- Specifically, several studies have shown that abdominal breathing at a rate ranging between **4.5 and 6.5 per minute** induces a cascading response: **breathing** → **heart rate** → **brain**.

- Breathing **below 4.5** or **above 6.5 per minute** will not have the physiological cascading effect that we have just described.

(Continue on page 2)

A little history

The concept of cardiac coherence comes from medical research in the field of neuroscience and neurocardiology. The beneficial impact of cardiac coherence on stress management, as highlighted by the Institute of HeartMath, is based on research conducted by Dr Andrew John Armour, a neurocardiologist at Hôpital du Sacré-Coeur de Montréal.

What is psychophysiological coherence (continued)

➤ Breathing becomes an important element in the harmonization of different systems: cardiovascular, central nervous and peripheral, and others. The results obtained allow us to establish an accurate profile.

➤ Psychophysiological coherence is the result of this cascading reaction, and measures the individual's progress. It is the physiological signature corresponding to the harmonization of different systems, and is derived from a dynamic synchronization of mental, emotional and biological functions.

In addition to having an objective

measure (resulting from various biomarkers), the individual will notice changes in his perceptions and reactions to various events encountered during the day.

Studies by Dr R. McCraty et al. from the Institute of HeartMath have also demonstrated the feasibility of attaining the psychophysiological coherence status using the following techniques:

- Reframing
- Thought management
- Visualization
- Use of positive emotions

Our experience leads us to use these tools gradually. We always start our **performance optimization program** by breathing exercises with a pace between 4.5 and 6.5 breaths per minute to have a direct psychophysiological impact.

Subsequently, when our biomarkers indicate a progression in the process, we introduce various other techniques.

The undeniable benefits of the psychophysiological coherence

By optimizing our response to stress and by increasing our resilience to it, we can easily perceive the benefits both on our health and in our ability to manage various situations.

Several scientific studies have demonstrated the impact of psychophysiological coherence in the control of various health problems such as hypertension, anxiety, etc.

Other studies have demonstrated its essential role in the performance optimization of employees as well as employers.

By improving psychophysiological coherence, we become more prepared to what we encounter and remain calm.

By the same token, this:

- enhances concentration
- increases attention and facilitates problem solving
- improves emotional balance and adaptability
- allows us to take a step back facing a situation
- gives us a sense of control to an external situation
- allows better management of energy to regularly achieve optimal performance
- gives greater satisfaction at work.

Simplify training

- Regular breathing exercises
- 3 daily sessions
- 5 minutes per session

Improving our psychophysiological coherence can also be done through breathing.

As we mentioned in our last issue, you are responsible for your success through your active participation in the training. It is therefore important to repeat the breathing exercises every day.

Significant changes are observed in participants who practice their breathing exercises 3 times a day for 5 minutes.

Cannot stop to breathe for 5 minutes? Why not

start with sessions of 3 minutes and increase at your own pace to progressively reach your 5 minute goal. Once you are comfortable, nothing prevents you from extending your sessions.

To achieve optimum performance, we must learn to breathe properly. Why not start with the most important: TAKE THE TIME to do so.

To learn more

- On our services: www.matteic.com
- On coherence: www.heartmath.org
- On biofeedback: www.aapb.org



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