

Psychophysiological Coherence: A Link between Positive Emotions, Stress Reduction, Performance and Health

Rollin McCraty

Proceedings of the Eleventh International Congress on Stress, Mauna Lani Bay, HI, Nov. – Dec. 2000. Paper presented at the American Psychological Association 109th Annual Convention, Symposium on Gratitude and Positive Emotionality as Links Between Social and Clinical Science, San Francisco, CA, Aug. 2001.

While much psychological theory and practice has focused on improving health and well being by eradicating negative emotions, relatively little research has explored the impact of positive emotions on physical and psychological functioning. We have found that sustained positive affective states lead to a clear and definable mode of physiological function that appears to facilitate the body's natural regenerative processes.

This mode, which we call physiological coherence, is associated with a sine wave-like pattern in the heart rhythms, increased heart/brain synchronization and entrainment between diverse physiological systems. Although physiological coherence is a natural human state which can occur spontaneously during positive emotional experiences and sleep, sustained episodes are generally rare. While specific rhythmic breathing methods may induce coherence and entrainment for brief periods, our research indicates that the active generation and maintenance of a positive emotion can produce extended periods of physiological coherence. Using positive emotion to drive the coherent mode allows it to emerge naturally, most likely as a result of changes in the patterns of afferent information flowing from the heart to the respiratory and other brain centers. This makes it easier to sustain the positive emotional state and coherent mode for longer periods, even during work and other activities. When the physiological coherence mode is driven by a positive psychological state, we call it psychophysiological coherence.

The capacity to self-generate positive emotional states and quickly shift to a physiologically coherent mode at will can be developed and refined through the use of practical tools and techniques developed by the Institute of HeartMath, such as Freeze-Frame, Heart Lock-In and Cut-Thru. This shift allows people to arrest the physiological stress response and prevent the psychological wear and tear normally associated with various stressors. Studies conducted across diverse populations have associated the use of these techniques with a wide range of beneficial health, performance and quality of life-related outcomes. Observed benefits include: reduced psychological stress and negative affect; decreased anxiety and depression; increased positive affect; improved psychosocial functioning; enhanced cognitive performance; increased emotional intelligence; reduced tension and physical stress symptoms; decreased burnout and fatigue; enhanced physical vitality; increased humoral immunity; reduced cortisol and increased DHEA.

Favorable outcomes associated with the psychophysiological coherence mode have been demonstrated not only in the laboratory but also in numerous organizational and educational settings. Additionally, practice of these techniques has been associated with health improvements in a wide variety of clinical conditions. Several examples include: reduced trait anxiety and pathological symptoms in individuals with HIV; reduced depression and improved functional capacity in elderly patients with congestive heart failure; the restoration of normal blood pressure levels in hypertensive individuals and improved glycemic control and quality of life in patients with diabetes.

The presentation will describe the coherent mode and methods by which physiological coherence can be objectively quantified. In addition, summary results from outcome studies will

be presented.

In conclusion, psychophysiological coherence is an internal mode of function that has far-reaching implications for human health and effectiveness. Physiological correlates of this mode can be objectively measured using straightforward methods. Practical tools and techniques exist by which individuals of diverse ages and backgrounds can learn to self-orchestrate coherence with increased consistency, thereby reducing stress and enhancing health, emotional stability, performance and quality of life.

For a detailed monograph on this subject, see also: [*The Appreciative Heart: The Psychophysiology of Positive Emotions and Optimal Functioning*](#)_scientific e-book.