

The Key to
Emotional Intelligence
is Understanding

HRV

HEART RATE VARIABILITY

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fierce.

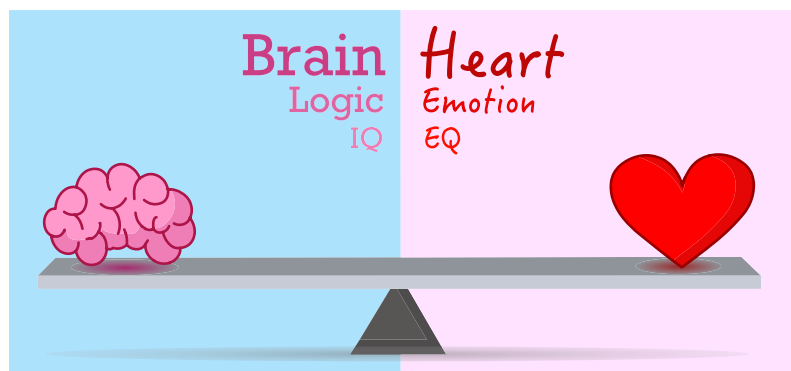


Heart Rate Variability and Emotional Regulation

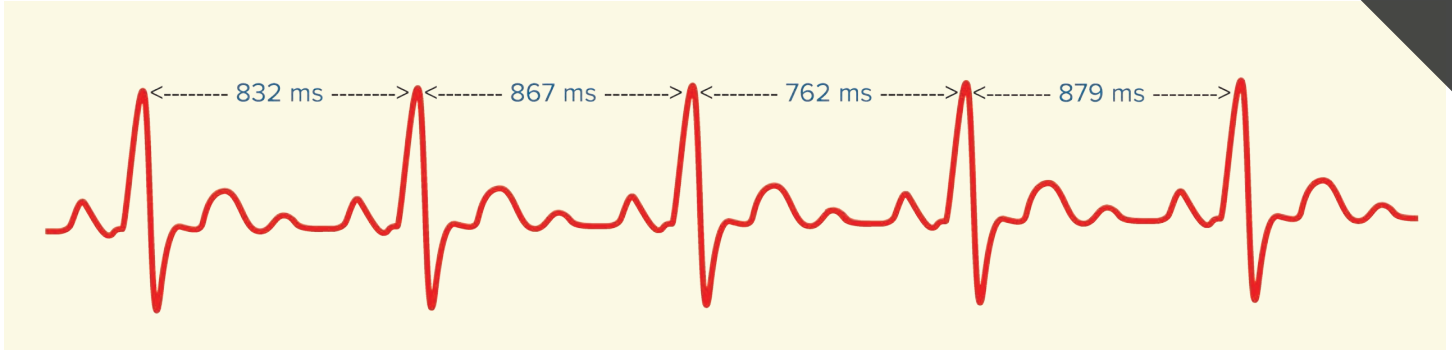
Controlling our emotional states and emotional responses is difficult because it has been challenging to establish metrics connected to something we feel and often have a difficult time describing. When you feel frustration, how do you apply a number to evaluate the severity of the emotion? In the midst of a particular emotion, we would rate something much differently than days later as an objective observer.

We all understand that increasing our own emotional intelligence will improve our leadership abilities, people skills, and even productivity as we stretch for new goals. One of the biggest challenges to increasing our emotional intelligence is that we have been unable to leverage real time, biometric data to understand how our emotions are impacting us throughout the day.

Through recent research exploring mind/body connections, there is a key that gives you control over the health of your emotional responses via a physical indicator. Using these metrics allows you to see the impact of stressors on your emotional states via concrete physical responses. Imagine the level of self-awareness and control this would give you over your own personal development.



HRV - The Stress Metric



Heart rate variability (HRV) is a broad indicator of overall cardiac health⁽¹⁻⁸⁾, psychological stress⁽⁹⁻¹⁴⁾, and emotional regulation⁽¹⁵⁻²⁰⁾.

The reason HRV is so significant is it involves the interplay of numerous neurological systems, most notably the interaction between the sympathetic nervous system (SNS) and parasympathetic nervous system (PNS) (15). The SNS initiates increases in heart rate. The PNS works to slow down our heart rate. When under stress, the SNS increases our heart rate to provide much needed blood & oxygen to our muscles to manage perceived threats. Once the threat is neutralized, our PNS lowers our HR to conserve energy for the next challenge. It is the dynamic interaction of the SNS and PNS that greatly influence HRV. If the SNS is dominant, this results in low HRV.

SYMPATHETIC NERVOUS SYSTEM (SNS)



Stress Response

Revs you up, preparing you to fight, take flight or freeze

- Heart beats faster
- Breath is fast and shallow
- Pupils of eyes expand (can make you sensitive to light)
- Gut becomes inactive (difficult to digest)
- Blood rushes to your muscles to prepare your body for action
- Hormones rush through your body, making you feel anxious
- Expend your energy

PARASYMPATHETIC NERVOUS SYSTEM (PNS)



Relaxation Response

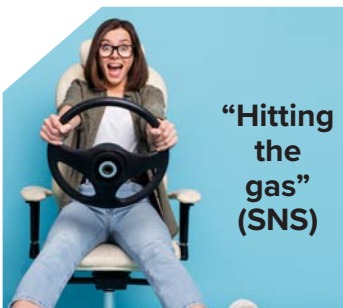
Calms you down, preparing you to rest, think and restore

- Heart beats in slow, rhythmic pattern
- Breath is full and slow
- Pupils of eyes shrink
- Gut is active (helps you digest and absorb the nutrients from your food)
- Increased blood flow to gut, lungs and brain
- Hormones rush in, lifting your mood and helping you to relax
- Conserves your energy

How HRV Can Manage Stress

When we perceive a threat or are under stress, we experience an emotional state that, through the SNS, results in increased cardiac activity. The heightened cardiac activity, if unchecked by the PNS can eventually lead to various detrimental health outcomes. To use a simple analogy, when the SNS is activated our nervous systems are essentially “hitting the gas”. The PNS is there to help our bodies “hit the brakes”.

Much like a vehicle, when a person’s body keeps hitting the gas without recovery, that person will “run out of gas”. Prolonged SNS activity results in low HRV and can have serious consequences. Research has shown that low HRV is an indicator of risk of heart disease⁽³⁻⁸⁾. The extent to which someone can go from “hitting the gas” to “hitting the brakes” is directly related to their ability to adjust their heart rate rapidly.



“Hitting the gas” (SNS)



“Hitting the brakes” (PNS)

Higher HRV is associated with greater ability to shift between these two systems. This is why higher HRV is often cited as an excellent indicator of overall heart health, psychological health, and emotional regulation.

The SNS and our emotional states intertwine. The SNS prepares our body for action, our emotions prompt us to take action.

Anger or fear can initiate behaviors such as confrontation or “preparing for the worst”. But when one emotion becomes dominant, our social and psychological health suffers. For example, anger can be helpful to motivate someone to stand up for themselves, but extended periods of anger will result in detrimental outcomes. Emotional regulation is necessary so the emotion is well suited for a given situation. A well balanced interplay between our SNS & PNS results in higher HRV and greater ability to regulate our emotions.

Research has shown that one’s ability to regulate emotions is closely linked to one’s ability to adjust levels of physiological arousal⁽²⁾. An adaptive and well integrated SNS and PNS are necessary to shift from one emotion to another as needed by the situation. Emotional regulation is our ability to shift from “hitting the gas” to “hitting the brake” along the SNS/PNS interchange. Tracking HRV gives us an objective gauge to regulate emotions.



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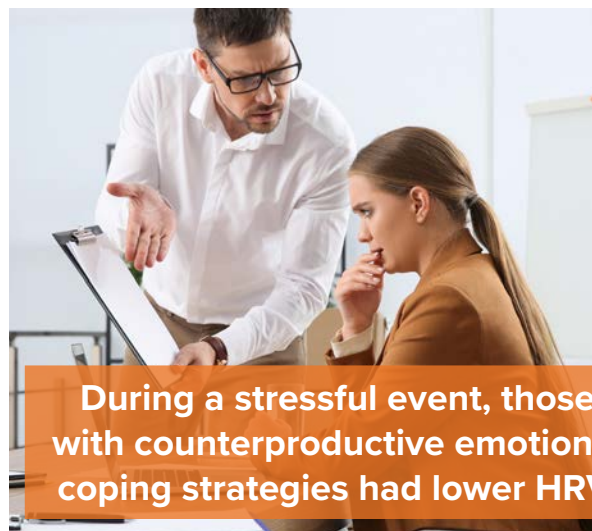
The Connection Between HRV and Emotions

Research bears out the connection between our emotional states and HRV. For example:



Those with higher HRV were more likely to report states of cheerfulness, calmness.

- Actively practicing to increase HRV has shown to have beneficial effects on emotional well-being⁽¹⁶⁾.
- The inability to regulate emotions (affective instability) is predicted by lower HRV⁽¹⁷⁾.
- Those coached to use the emotional regulation technique of cognitive reappraisal experienced increases in HRV following an anger inducing stimulus⁽¹⁸⁾.
- Higher HRV was associated with greater use of daily emotional regulation techniques⁽¹⁹⁾.
- Mindfulness practice (an effective emotional regulation technique) was associated with increases in HRV⁽²⁰⁾.



During a stressful event, those with counterproductive emotional coping strategies had lower HRV.

- During a stressful event, those with counterproductive emotional coping strategies displayed lower HRV⁽²²⁻²⁴⁾.
- Lower waking HRV was associated with greater frequency of worrying and greater duration of worrying⁽²⁵⁾.
- Those with higher HRV were more likely to report states of cheerfulness, calmness & use of emotional regulation techniques⁽²⁶⁾.

Before research understood the connection between HRV and emotions, we had no objective measure for self awareness into our emotional states. Ongoing research confirms HRV is a strong physical indicator to understand and change our emotional states. With the increasing availability of wearable technology like the Fitbit or Apple Watch, we now have the ability to track this metric and develop greater self-awareness of our emotional states.

In the modern workplace, we all strive for high performance but suffer under lack of productivity, missing goals, interpersonal conflicts, and high-levels of burnout. Imagine giving yourself and your teams an objective measure to their own emotional states. Especially when you can connect HRV to events in the work day, you would be able to match skill sets to overcoming specific stressors. You would have a revolutionary tool for team productivity that would drive greater collaboration, innovation, and profits.

HRV for Workplace Performance



The research into the connection between HRV and regulating our emotional responses that fueled the innovation team at Fierce to build Pulse. For over 20 years, Fierce led the learning and development industry among the Fortune 500 by developing frameworks and conversational tools to instill true change and growth where conflict or stagnation had taken hold.

Our methods worked but we wanted faster, more efficient results. Discovering HRV was the key to unlocking individual and team change, we finally had a tool that could objectively monitor real time stress responses and then provide resources to change behavior fast. In beta testing, participants reduced measurable symptoms of stress, built resilience, and instilled new behaviors in as quick as 2 weeks.

We see a future where toxic culture and symptoms of burnout can be eliminated and productivity will be unleashed. The implications for increasing company profits while at the same time, increasing worker wellbeing through behavior change is a reality.

Just like athletes have begun using HRV to track recovery for increased performance, the Pulse App is the performance enhancer for the workplace. To learn more about how Pulse can be customized and integrated for your own organization's performance, contact us at **(206) 787-1100** or visit <https://fierceinc.com/contact-us/> to be connected with our leads specialist.

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