

HRV – HEART RATE VARIABILITY EXPLAINED

Posted on July 28, 2016 by [Vicky Hadley](#)

Over the past 12 weeks, I have completed a condensed study on the effects of training volume and intensity on my recovery and ability to subsequently perform at my following lifting sessions. The objective of the study was to understand how not only our next training session but also nutrition & lifestyle should be optimized with relation to data acquired from our heart rate (HR) and heart rate variability (HRV). You might ask, “Why are we monitoring our HR and or HRV to know how I must eat and train the next day? Can’t I just tough it out, eat the same healthy foods, and or mentally psyche myself up and go for it at full force?”. What if I told you that by paying closer attention to your raw data and specific markers that you *exponentially reduce* the margin of error with respect to increasing the training volume when you haven’t recovered, decreasing the training intensity when you actually can be put through a more challenging session, and or consuming the wrong macronutrient ratios to assist with your subsequent training protocol and health objectives? The following discussion will highlight the factors that can adversely/improve your HRV, and the advantage of using a mobile HRV application to continually progress your health goals while catering to your recovery.

**Within the 12 weeks of conducting my HRV study, I collected data when I awoke in the morning for 2.5 minutes in a standing position using the Polar H7 Bluetooth Heart Rate Monitor with the Elite HRV mobile application, as I believed a longer reading per day with more data points could provide a more accurate reading.*

HRV is the difference in time between successive heart beats. Unlike your average heart rate value, your HRV looks into the fluctuations of your heart rate, specifically at R-R intervals. When your autonomic nervous system (a part of the nervous system that functions involuntarily & controls bodily functions such as your respiration, heartbeat, digestive processes, blood pressure etc), is placed under stress during a rigorous lifting session, research (Stanley, Peake and Buchheit, 2013) has indicated that the sympathetic nervous system is stimulated. In other words, your body shifts itself into a ‘fight or flight’ state, preparing you to survive through stressful situations. On the opposite side of the spectrum, you have the parasympathetic nervous system that activates when you are aiming to recover, sleep, relax, and or better digest food. Our bodies will always try to bring our internal system back to homeostasis, that being a relatively steady internal environment that balances parasympathetic and sympathetic stimulation (Rodolfo, 2000). As we aim to recover and manage stress, monitoring our HRV via outstanding applications such as HRV4 Training and or the Elite HRV app, helps us collect data and note personal markers to analyze our autonomic nervous system’s response to training loads.

From analyzing my initial data from starting my new training protocol, it was clear that after a heavy lifting session and or any new training stimulus, that my HRV decreased from

baseline. However, as the weeks progressed, my HRV improved due to my adaptation to the new stimulus. That being said, the latter could not be possible without an optimized nutritional protocol to manage the stress from training. However, it wasn't only my nutrition and my body's ability to adapt that played a significant role.

One of the unique abilities of capturing one's HRV and reviewing its trends is that it is a global marker. This means that the HRV value of a client is not only affected from his or her training, but also factors from their physical well-being, mental stress/clarity, and internal chemistry. The beauty of certain HRV mobile applications is that we are able to track a number of markers, such as perceived physical exertion, quality and length of sleep and mood, to then create meaningful adjustments to optimize the training and nutrition of a client. Every client's markers and HRV trends should be treated uniquely. We do not all share the same stressors physically, mentally, and innately. In the same token, the same stimulus prescribed to a beginner, intermediate and advanced lifter will lead to different HRV scores due to the adaptation process to the new stimulus. It is very important to note that your lifestyle plays a large role towards not only your HRV score, but also towards the success of forging your healthier and improved physique. From your sleep, to alcohol consumption, from being sick to even anxiety, from stress at work to your personal life will all adversely affect your HRV and ultimately, subsequent performance. From spending time outside and reading a book in the sun, to yoga and or enjoying time with a loved one, what you perceive as relaxing will activate your parasympathetic nervous system and improve your HRV back to baseline or better, hence improving your performance.

An optimized training and nutrition protocol that suits an individual's physiological needs with the correct amount of stress, calories and nutrients will forge and build upon the foundation of your health and physique objectives. An indicator of your HRV based on the evaluation on the effects that stress has had on your physiology from not only your training and nutrition, but also personal markers such as quality of sleep, perceived exertion during training, mood, and other notes on your lifestyle will better inform the course of action to improve your mind, body, and ultimately your performance. This is why the Fe Gym will provide 5 distinguished ranges of stress based activity to which a set level will be deemed most beneficial to your body based through continued evaluation on the effects that stress may have on your physiology.

I cannot write it better than Justin Maguire from his recent "Genes can be a MTHFR" article where he informs us to, "Take the initiative to educate yourself into strategy which can alter the way in which you stress and cope with stress imposed on your body. Nutrition is vital to life, through the correct type of diet strategy you can cope with debilitating inflammation and potentially even optimize your recovery and mental clarity. Take the limitations of the unknown out of your individual equation and set a formulae that is set to deliver results, health and most importantly happiness". At Fe Gym, our coaches stand to deliver results with bespoke formulae, and using an impeccable Heart Rate Variability monitoring mobile application is one of several methods.