

STRESS AND HRV

Hello Patients and Friends.

In this email I will talk about Stress, how we look at it and how to promote a more healthy immune system and life.

HRV (heart rate variability), Stress and our ability to adapt = Illness or Health!

HRV: Heart Rate Variability helps us determine how well we are adapting to stress via the primitive part of our ANS (autonomic nervous system) which is divided into two main branches; the parasympathetic (rest and digest) and sympathetic (fight and flight) nervous system. A healthy adaptive autonomic nervous system adjusts to the changes of your physiology and psychology. Whereas, an individual who is depleted, or overly stressed does not have a healthy adaptive autonomic nervous system.

You can measure your HRV through an app and an inexpensive chest strap heart monitor. Some apps even test you through your phone's camera and light combination but chest straps tend to give you more consistent readings.

What are the differences between these two systems in general?

Parasympathetic Nervous System: Your ability to rest and relax, digest your food well, good quality sleep and healing at night, good elimination, promotes release of muscle and tissue repairing hormones such as Growth hormone, Melatonin, Testosterone, DHEA, Pregnenolone, Estrogen among others, is anabolic (repairing) promoting, promotes sexual arousal, most active at night (10 pm - 2 pm), promotes repair from the Sympathetic Nervous System damage. Originates from the midbrain and sacral segments of the spinal cord.

This should be our primary state with the sympathetic nervous system coming and going throughout the day. This is stimulated through Acupuncture, mindfulness, meditation, good quality sleep, foods and drink that agree with us, a beautiful sunrise or sunset, friends and loved ones that accept us for who we are, after a good workout or when we feel good about what we did, sitting at the beach, in nature, detaching from all the "stuff" at work and home, a relaxing vacation, massage, breathing exercises (4 seconds in, 8 seconds out) etc.

Sympathetic Nervous System: Your fight or flight response, suppresses your immune system, decreases your blood flow to your digestive system, increases heart rate, blood pressure, blood flow to limbs, promotes sweating, pupil dilation, muscle breakdown (catabolic in general), sexual function decreased, increases cortisol, (suppresses your immune system promotes muscle breakdown and fat storing hormones), adrenaline and acetylcholine, Naturally active during the day, stimulated more with everyday stress, exercise, work, deadlines, traffic, family, relationship, and kids. Originates from the thoracic and lumbar segments of the spinal cord.

Since our ANS cannot easily differentiate between real and imagined stress, as most of us have experienced many times, we can actually do things to promote our parasympathetic nervous system (some of them listed above under parasympathetic nervous system) to create a more balanced autonomic nervous system and this can be seen in our Heart Rate Variability.

A healthy person will have variability in their heart beats, meaning the time between each heart beat is variable, not consistently similar. If a person is sympathetic dominant the variations in subsequent heartbeats will be low, meaning their heart rate will be more consistent. The more relaxed a person is the variations will be greater. So the healthy baseline of your autonomic nervous system is a relaxed state with intermittent so called “stresses” that in a healthy person promote your ability to adapt to changes within and around you.

A stressor can be any variation or routine in our day to day life that we have not adapted to such as a bad day at work or with family or friends, travel, multiple nights of poor sleep, feeling fatigued after exercise or very little exercise, foods or drink that are not good for you, changes in weather, isolation, out of the ordinary activities, excitement, or any other “stress” that we have to adapt to.

Healthy “stress” is any stress that promotes you to adapt to a situation whether the situation is repetitive or new thus promoting your ability to recover and overcome greater stressors. What is interesting here is that a so called healthy stress may be unhealthy when we are run down and literally don’t have the energy/capacity to adapt to it and other times when we are feeling energetic and strong what was once a negative stressor that would have totally ruined our day is just an obstacle to overcome/complete and go forward in life.

An unhealthy “stress” is one that you don’t adapt and recover from. If this continues for a period of time you will get weaker and your ability to handle day to day tasks will become even more difficult until you get physically sick/injured or start having more negative thoughts to the point of anxiety or depression. As you can see this can become a negative spiral that gets harder and harder to get out of.

In HRV this means your sympathetic nervous system is now dominant and your heart rate variability becomes more regular.

When we adapt to any of these “stresses” we can call them a good stressor because we are healthy enough and capable of creating a positive change, but when we can not adapt to them, it will wear us down and eventually cause ill health as stated above. Examples include a physical injury while exercising, like generalized body aches, specific areas such as our lower back, shoulder, ankles, progressive fatigue; mental decline/anguish when we are asked to do simple task, illnesses like getting colds or flu because our susceptibility to disease or illness increase, allergies, headaches, digestive problems, breathing problems, chronic local or systemic irritation/inflammation, and many other physiological and mental diseases or illnesses.

Recently with the Stay at Home (Quarantine), isolation/lack of social engagement, irregular hours, poor sleep due to the unknown and conflicting information we are given and the unhealthy lifestyles we have gravitated towards lack of exercise/movement and poor food and drink which are very negative stressors for most people.

[I can help you get back your healthy lifestyle through support via acupuncture, herbs, determining your constitutional type and how that can guide you to a healthier lifestyle through diet, exercise and awareness of your weak or more susceptible areas whether physical, mental or emotional.](#)

In Health

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My future emails will be about ways to improve our ability to adapt to stress.

- 1. Special ways and devices to help our ability to adapt through exercise.**
- 2. Nutrition lifestyle.**

3. **General lifestyle.**
4. **Supplements and Herbs to help you adapt to stress.**