Some Information About Heart Rate Variability

Heart rate variability or HRV is a measure of tiny fluctuations in timing from one beat of your heart to the next. It is very small and measured in milliseconds. It is true that steady regular pulse is a sign of healthy heart. On the other hand, high HRV is linked to better cardiac health, which suggests that your heart is rapidly adapting to changes happening throughout your body.

HRV is a reflection of our autonomic nervous system Activity. This system runs on autopilot and regulates involuntary actions like heart rate, breathing, digestive system, etc. It is the interplay between two opposing systems. Sympathetic nervous system activates the “ fight or flight” response, in other words, governs the-stress response.

This increases the heart rate with less heart rate variability. On the other hand, parasympathetic nervous system, also known as ” rest and digest” system, promotes relaxation and recovery, which tends to lower the heart rate and increases HRV. A high HRV typically is better, and indicates parasympathetic dominance, meaning the body is better at managing stress and recovery.

The constant interaction between these two systems underlies the variability of your heart rate.

FACTORS AFFECTING HRV -HRV decreases with age. Older individuals generally have lower HRV compared to younger people, because of decline in the parasympathetic nervous system activity with aging. -Fitness level: Physically fit individuals often have a higher HRV because their cardiovascular system is better able to manage stress and recovery.

Regular aerobic exercise can increase HRV. -Stress: Poor sleep can reduce HRV. Good quality sleep is associated with higher HRV as it supports parasympathetic nervous system activity. -Nutrition and hydration: Poor nutrition, dehydration, and excessive alcohol intake can lower HRV.

A balanced diet, hydration and avoiding excessive stimulant like coffee and alcohol increases HRV. -Illness/Diseases: Cronic inflammation, heart disease, diabetes, anxiety, and depression and infection can lead to lower HRV.

It can be a helpful biomarker for assessing the health impact of chronic conditions. - Meditation.: Activities that-promote relaxation, like meditation, deep, breathing, yoga, and mindfulness can all significant increase the HRV by stimulating the parasympathetic nervous system. - Time of the day: HRV fluctuate throughout the day, typically being higher in the morning after good night sleep and lower in the evening after a stressful day.

It is also typically higher after a period of relaxation and lower after intense, physical activity or stress.

MEASURING HRV HRV is typically measured by analysis of the electrocardiogram or 24 hour Holter monitoring. Most smart watches measure your HRV automatically while you are sleeping, either continuously or briefly at specific intervals. Some also check periodically throughout the day or on demand.

Overnight checks are thought to better represent your autonomic nervous system activity, since these measurements were not influenced by activity and other external factors. You can check the companion health metric on your smart phone which are usually presented as an average over a set of time.

There is no set definition of what constitutes a high or low values, since so many things influence, HRV, including age, fitness level, genetics, medical history, and lifestyle habits. As such, there are no guidelines or recommendations from professional cardiovascular societies regarding HRV

If you want to track your HRV, don’t compare yourself with others. Just focus on your own baseline value. It may be helpful to see if you can improve your HRV as you adopt heart, healthy habits. Besides getting regular exercise, factors that tend to increase HRV are meditation, stress reduction, healthy, eating, and good quality sleep for 7 to 8 hours at night.

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