

Does LaVita objectively and measurably change health status?

Results of a field study with
250 participants and 60,000
measurement hours of heart
rate variability.



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Executive Summary

IMPACT OF LAVITA ON HEALTH: A Field Study

This summary outlines the findings from a field study conducted from May to August 2024, which evaluated the effects of daily LaVita intake on health. Involving 250 healthy participants aged 20 to 65, the study spanned 12 weeks. Each participant consumed 20 milliliters of LaVita daily, and their health was tracked through weekly 24-hour Heart Rate Variability (HRV) measurements, totaling 60,000 hours of data.

KEY FINDINGS

1. Total Power of HRV:

Total Power, reflecting participants' overall energy, improved significantly. Women saw a 15% increase, while men experienced a 10% rise. By the study's end, women's Total Power matched men's, despite starting lower.

2. Reduction in Heartbeats:

Improved cardiovascular efficiency was indicated by a reduction in daily heartbeats. Men's heartbeats decreased by 9% (9,168 fewer beats), and women's by 8% (7,825 fewer beats), equating to nearly 2 million saved heartbeats across all participants daily.

3. Enhanced Vagus Activity (pNN50):

The pNN50 index, measuring vagus nerve activity, saw significant boosts, with women's scores rising by 65% and men's by 72%, reflecting improved recovery and stress resilience.

4. Overall Health Status:

Participants began the study in good health, yet their scores improved further. Women's health scores increased by 16 percentage points, and men's by 18 points on a scale of 1.0 (very poor) to 10.0 (excellent).

CONCLUSION

LaVita micronutrient concentrate significantly improves health in healthy individuals, enhancing energy levels, cardiovascular efficiency, and recovery. It provides an effective, convenient solution for meeting daily nutritional needs, making it a valuable addition to a health-conscious lifestyle.

IMPLICATIONS FOR USE

LaVita offers measurable benefits for those seeking to improve or maintain health, enhancing performance and resilience while serving as a preventive measure for long-term well-being.

Does LaVita Objectively and Measurably Improve Health?

Results of a Field Study with 250 Participants and 60,000 Hours of Heart Rate Variability Measurements

ABSTRACT

Between May and August 2024, a field study was conducted to determine whether the daily intake of 20 milliliters of LaVita over 12 weeks could measurably improve health. 250 randomly selected healthy individuals aged 20 to 65 years conducted weekly 24-hour heart rate variability (HRV) measurements. The analysis of all medically relevant parameters showed a significant improvement in the participants' health.

INTRODUCTION

There has been a significant amount of feedback from consumers regarding positive changes in health due to the micronutrient concentrate LaVita. However, objective improvements in defined health parameters, as evidenced by measurement data, had not been previously documented. Demonstrating measurable health improvements in individuals who are healthy, engaged in their daily routines, and not feeling ill has also not been possible until recently.

While it is routine in medical practice to assess the severity of an illness using various clinical parameters, including inflammation markers, imaging techniques, pain scales, nerve conduction velocities, ECG, and EEG, measuring the actual health of an individual, how well they function, is not achievable due to the lack of gradation within the normal values of medical findings.

However, beyond disease, there is also health. Restoring, maintaining, or improving health is fundamentally the most important aspect of a person's life. Many people are not content with just being treated; they also want to actively work on their health. Moreover, there are increasingly healthy individuals who wish to stay strong, happy, and continue improving their health.

These individuals do not want to rely solely on their subjective feelings but seek reliable data that serves as a compass on their journey to (better) health. Obtaining such data has become easy through HRV measurement, a medically established method that enables the objective assessment of the functional state of an organism.

The principle of HRV is based on the heart's natural ability to change the time interval between one heart-beat and the next. This phenomenon serves as a scientifically validated tool, enabling the precise detection of various disease and health states.

High HRV is considered indicative of an individual's ability to quickly and effectively respond to situational changes. People with high HRV values are more resilient and stress-tolerant. Low heart rate variability, on the other hand, is associated with lower resilience.

HRV is increasingly used in scientific studies as an infallible measurement method, even when investigating the effects of (micro)nutrients, a critical pillar for building health. LaVita claims to contribute significantly to building health. To scientifically examine this assumption, a representative field study was conducted to determine whether and to what extent LaVita affects specific health-relevant HRV parameters in healthy individuals.

METHOD

Randomly selected participants committed to consuming 20 milliliters of LaVita daily for 12 weeks. The inclusion criterion was that participants had never previously consumed LaVita; the exclusion criterion was the presence of any existing illness. All participants underwent 24-hour HRV measurements, starting one week before the regular intake of LaVita and continuing for the following 12 weeks, on the same weekday, and considering similar daily routines, sleep patterns, etc.

A total of 286 participants took part in the field study. For 223 participants, the required number of high-quality HRV measurements, accompanied by documented activities and a measurement duration of 22 to 24 hours, was achieved and included in the study.

The analysis of the collected data was conducted according to internationally accepted standards using the HRV-Science software from Autonom Health GesundheitsbildungsGmbH.

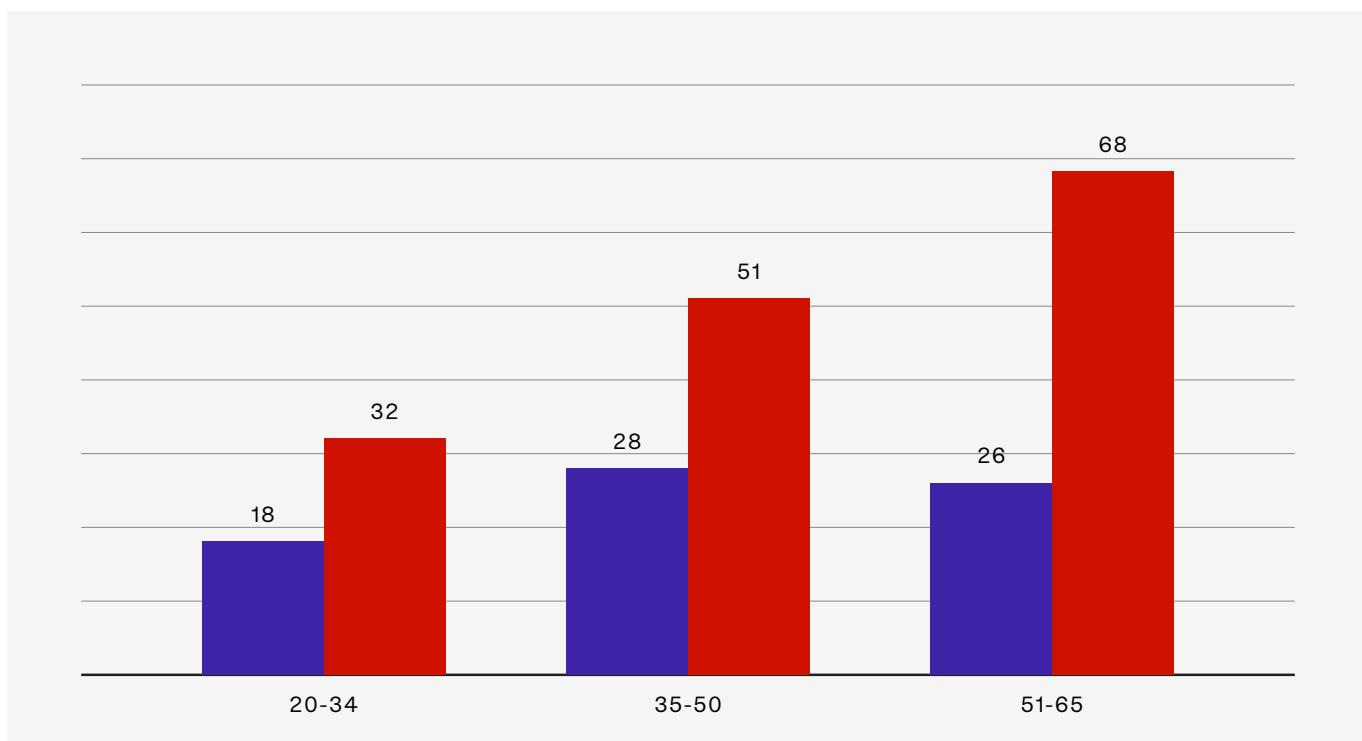


Figure 1: The measurement data from 72 men and 151 women, totaling 2,676 measurements, each over 24 hours, were analyzed.

RESULTS

The following key health indicators, established in the scientific community, were collected and assessed:

1. Total Power of HRV

This value encompasses the total extent of all intervals between all heartbeats during a measurement. It is expressed in milliseconds squared and describes the overall energy of an individual. On average, over

24 hours, Total Power is over 6,000 in adolescents and about 2,000 in individuals over 60 years old.

Women increased their Total Power by 15%, or 413 msec^2 , and men by 10%, or 308 msec^2 . Both groups showed highly synchronized progress curves.

Notably, the average Total Power value of women, who naturally have lower Total Power than men, was equal to that of men by the end of the observation period.

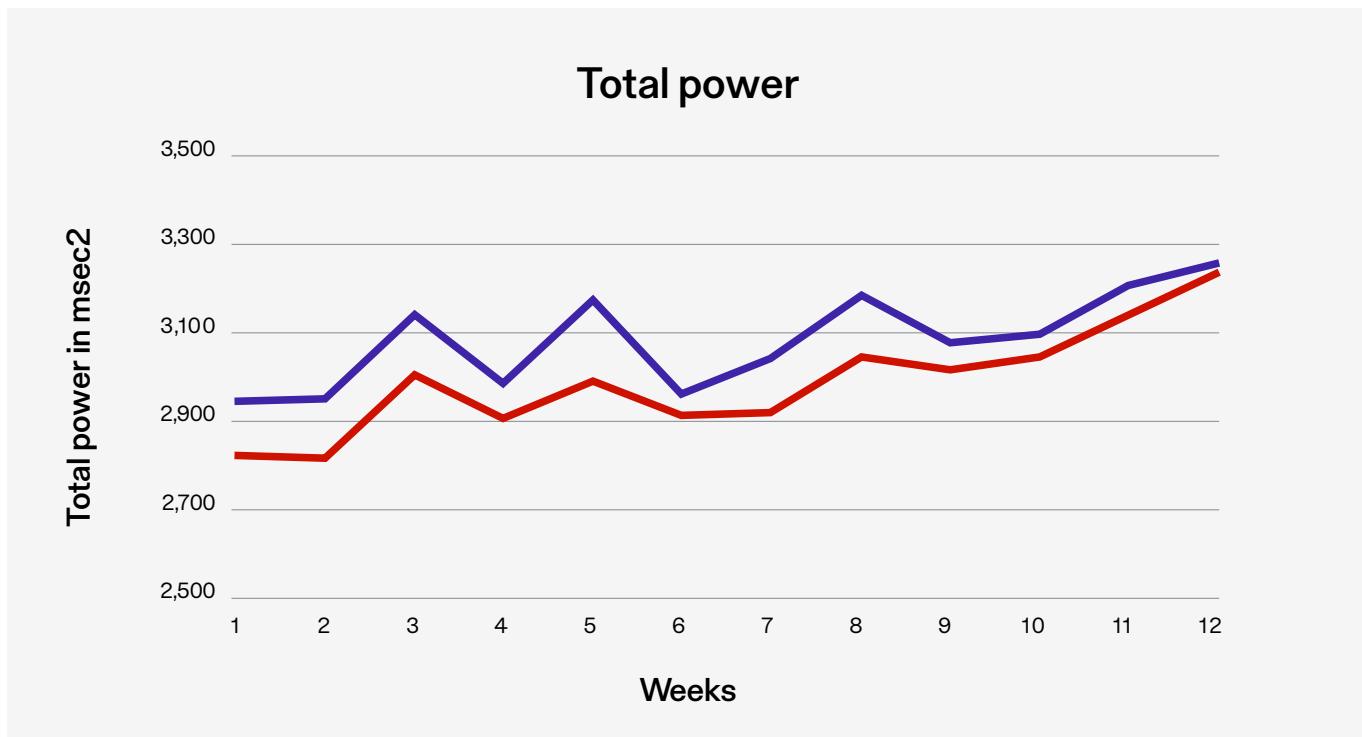


Figure 2: The development of HRV Total Power in men (from 2,946 to 3,253 msec²) and women (from 2,824 to 3,237 msec²).

2. Number of Heartbeats in 24 Hours

The fewer times the heart needs to beat to supply the entire organism, the better. In burnout, the heart may contract more than 140,000 times in 24 hours, whereas top athletes may have less than 80,000 beats. The average across all age groups and both

genders is about 102,000, corresponding to 71 beats per minute. At the end of the observation period, the men's hearts had to beat 9% or 9,168 times less frequently than at the beginning, and the women's hearts 8% or 7,825 times less. In total, nearly 2 million heartbeats per day were saved.

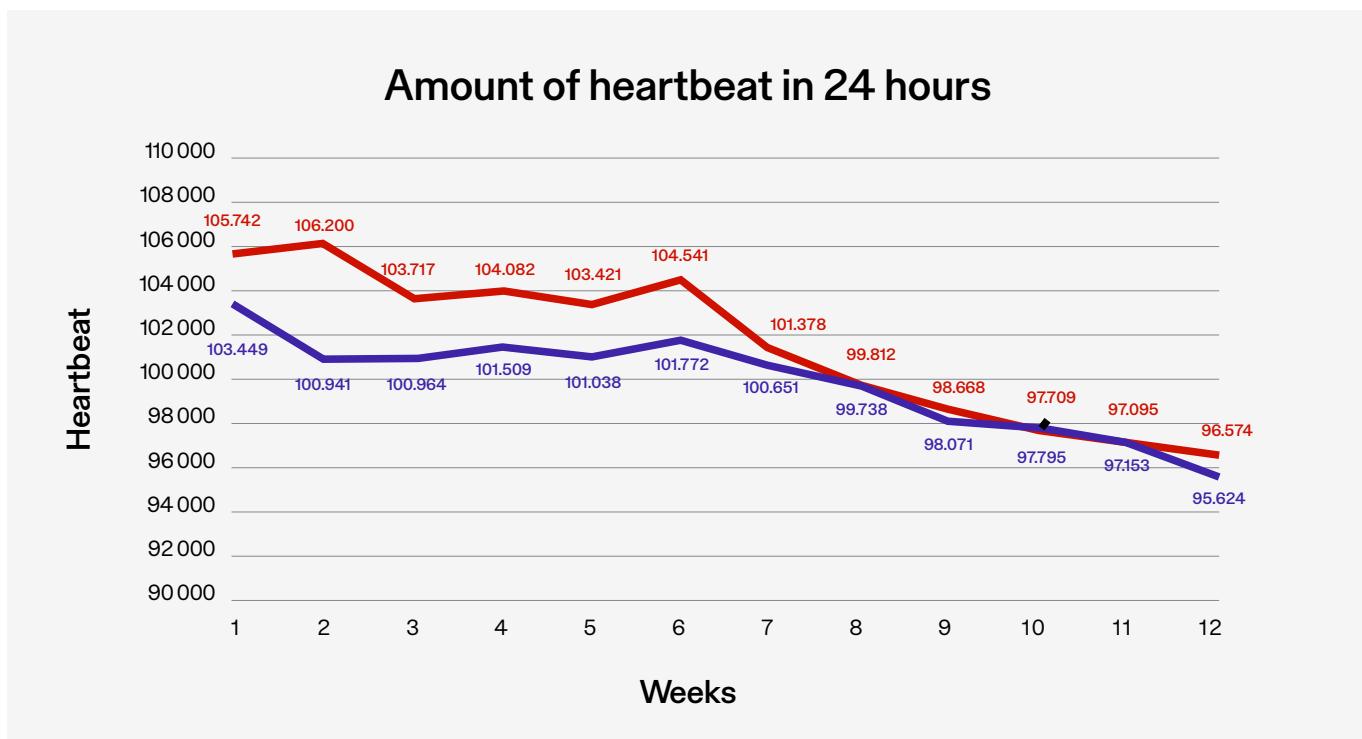


Figure 3: Number of heartbeats in 24 hours for men and women.

3. pNN50

This value is a measure of parasympathetic, or vagus nerve, activity, the so-called “health nerve”. It measures the percentage of consecutive intervals between heartbeats that differ by 50 milliseconds or more. The higher the value, the more regenerative capacity

during rest periods and economy during exertion. The data from the field study supports that women have more vagus activity than men. Both groups significantly improved their values, with women by 65% and men by 72%.

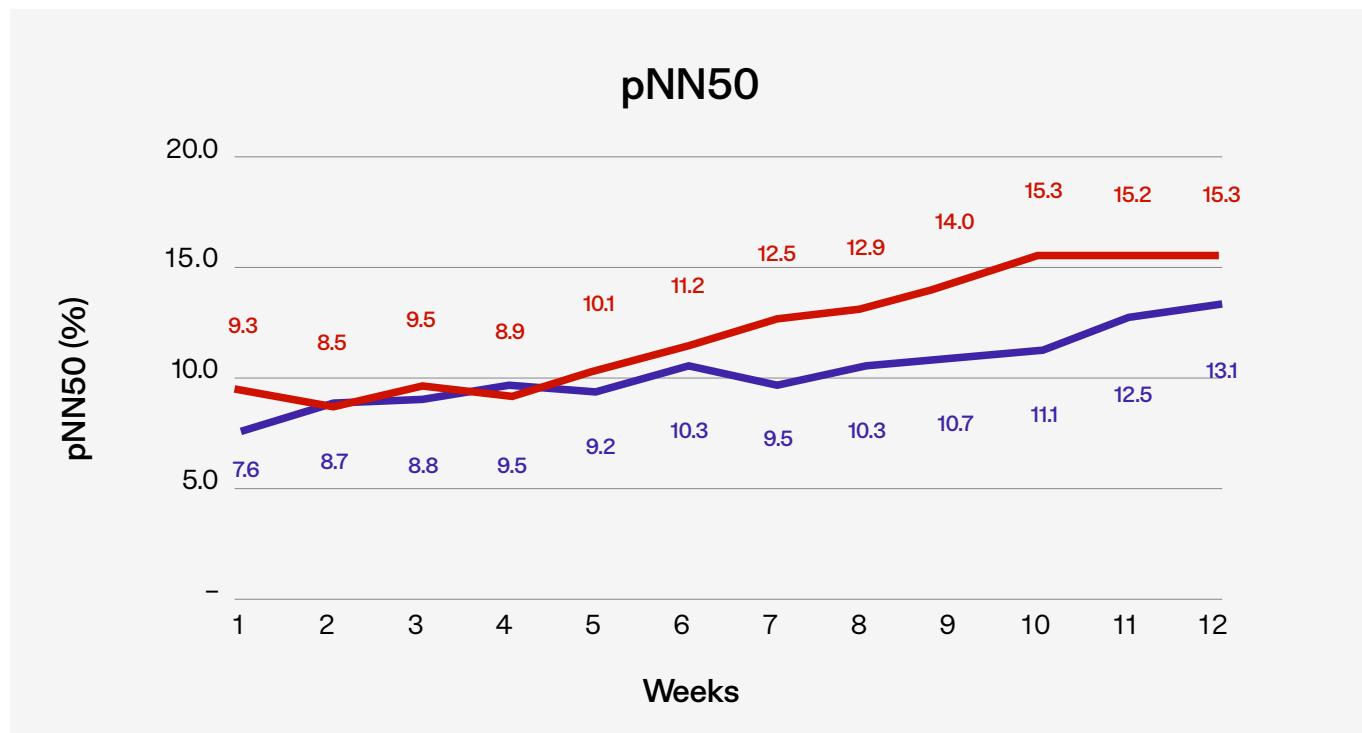


Figure 4: Percentage of intervals between heartbeats of all measurements with 50 milliseconds or more difference in time between men and women.

4. Health Status

This is expressed as an index of all recorded values and calculations from a measurement. All aspects of HRV are considered, such as variability in the Very Low Frequency range, reflecting the blood flow rhythm in the muscles where energy reserves (glycogen and protein) are stored. Absolute values of average heart rates during the day and sleep, and the magnitude of the difference between these values as an indicator of stress processing and recovery, are also considered.

The results clearly show that the participating men and women were already in good general health before the start of the measurements. During the daily intake of LaVita micronutrient concentrate, the health status of the participants improved further, by 16 percentage points for women and 18 percentage points for men.

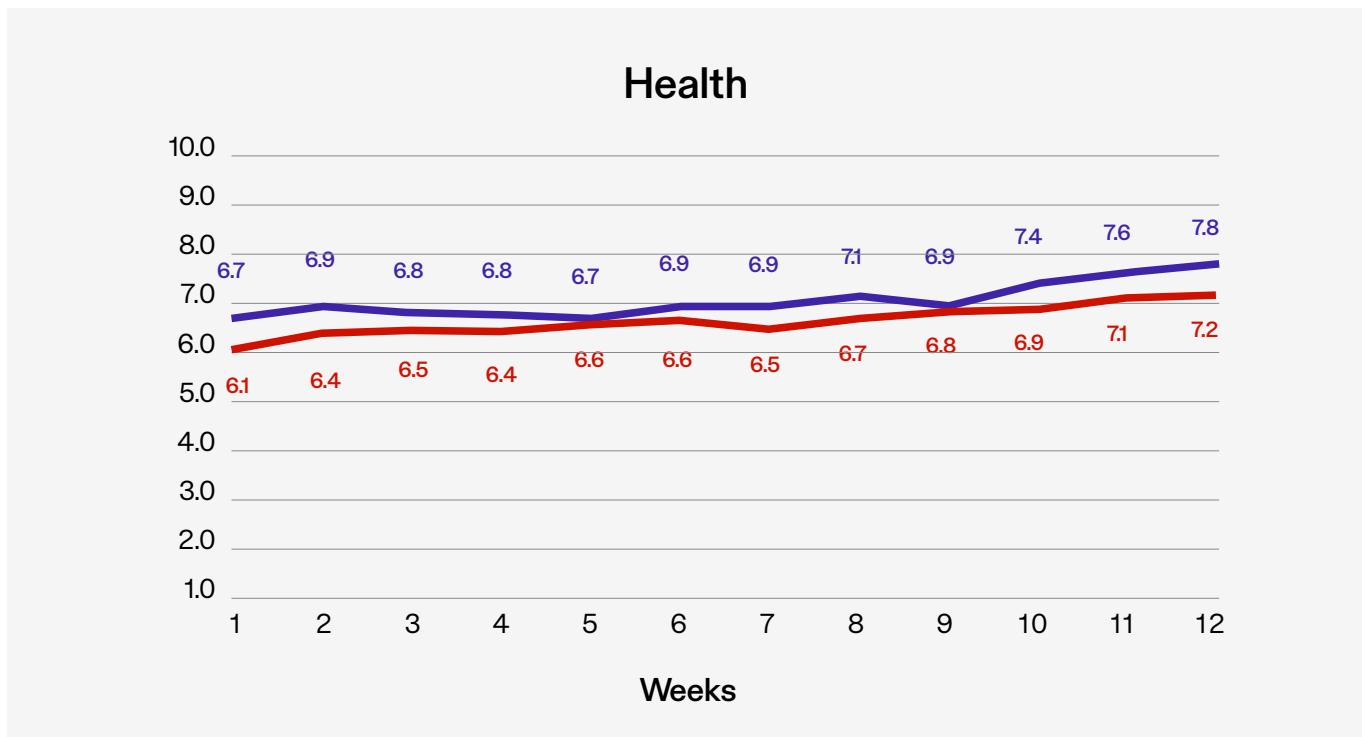


Figure 5: Development of the health status of women and men on a scale from 1.0 (very poor) to 10.0 (very good).

DISCUSSION

The results of this field study suggest that the performance and recovery capacity of healthy women and men of different age groups can be measurably improved through the regular intake of LaVita micronutrient concentrate.

Given that adequate micronutrient supply cannot be reliably ensured even with careful dietary habits, the intake of an easily applicable supplement with broad coverage of nutritional needs appears sensible in terms of prevention.

Furthermore, it can be assumed that ensuring the ongoing supply of necessary nutrients in healthy individuals can further improve quality of life.

Further studies with HRV measurements as part of targeted use of LaVita micronutrient concentrate in defined disease conditions should be conducted.

Dr. Alfred Lohninger
Medical Director
Autonom Health, August 2024

LITERATURE

Akselrod S et al. *Power spectrum analysis of heart rate fluctuation: a quantitative probe of beat-to-beat cardiovascular control*. Science 1981; 213: 220–222.

Bernardi L, Wdowczyk-Szulc J, Valenti C, Castoldi S, Passino C, Spadacini G, Sleight P. *Effects of controlled breathing, mental activity and mental stress with or without verbalization on heart rate variability*. J Am Coll Cardiol. 2000 May;35(6):1462-9. doi: 10.1016/s0735-1097(00)00595-7.

Birbaumer N, Schmidt R. *Biologische Psychologie* (6., vollst. überarb. u. erg. Aufl.). Heidelberg: Springer 2006.

Canpolat U, Ozcan F, Ozeke O, Turak O, Yayla C, Acikgoz SK, Cay S, Topaloglu S, Aras D, Aydogdu S *Impaired cardiac autonomic functions in apparently healthy subjects with vitamin D deficiency* Ann Noninvasive Electrocardiol, 20 (4) (2015), pp. 378-385

Cerutti S, Bianchi A, Mainardi L. *Spectral analysis of the heart rate variability signal*, in: Malik M, Camm AJ (eds.). *Heart Rate Variability*. Armonk, NY: Futura Publishing Company 2005. pp. 63–74.

Claydon V, Krassioukov A. *Clinical correlates of frequency analyses of cardiovascular control after spinal cord injury*. Am J Physiol Heart Circ Physiol 2008; 294: H668–H678.

Fukuda S, Koyama H, Kondo K, Fujii H, Hirayama Y, Tabata T, Okamura M, Yamakawa T, Okada S, Hirata S, et al. *Effects of nutritional supplementation on fatigue, and autonomic and immune dysfunction in patients with end-stage renal disease: a randomized, double-blind, placebo-controlled, multicenter trial*. PLoS One, 10 (3) (2015), p. e0119578

Lohninger, A. (2021). *Herzratenvariabilität – Das HRV-Praxislehrbuch*. Wien: Facultas.

Lopresti, 2020. *Association between micronutrients and heart rate variability: a review of human studies* Adv. Nutr., 11 (2020), pp. 559-57

Sammito S et al. *Leitlinie Nutzung der Herzschlagfrequenz und der Herzfrequenzvariabilität in der Arbeitsmedizin und der Arbeitswissenschaft*. Portal Wiss Med 2014; 11: 1-60.

Sozen AB, Demirel S, Akkaya V, Kudat H, Tukek T, Yeneral M, Ozcan M, Guven O, Korkut F. *Autonomic dysfunction in vitamin B12 deficiency: a heart rate variability study*. J Auton Nerv Syst, 71 (1) (1998), pp. 25-27

Task Force of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology. *Heart rate variability: standards of measurements, physiological interpretation, and clinical use*. Circulation 1996; 93: 1043-1056

Yokusoglu M, Nevruz O, Baysan O, Uzun M, Demirkol S, Avcu F, Koz C, Cetin T, Hasimi A, Ural AU, et al. *The altered autonomic nervous system activity in iron deficiency anemia*. Tohoku J Exp Med, 212 (4) (2007), pp. 397-402