THE **BEOSIGNER®** AND THE **BEOKEYS** — A SCIENTIFIC EVALUATION

REPORT, No. 24/209/1/18-RSNH-1-1

and comprehensible explanation to examine the Beosigner[®] and the BeoKeys for regulation and vital signs, double blind study 2022/2023

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Aim of the survey

The subject of the present study is an empirical evaluation on the effects of the Beosigner[®] on regulation and vital signs, with special consideration of the different BeoKeys. According to international guidelines, the examination should show the extent to which there is an effect on regulation, vital signs, and regeneration. The performance was re-examined after eight weeks in addition to the first data analysis (entire group). This was done using methods commonly used in sports science.

A total of 32 male and female subjects aged between 32 and 68 years took part in the study. The subjects were not informed about the purpose of the study. All that was known, was that a sports medicine test had been carried out.

Vitalization

The vitalization time was two minutes each.

Load parameters

Usual training program, PWC. The data was recorded in the laboratory in a relaxed sitting position.

Measuring devices

(for an explanation of the measuring methods, see the appendix)

Respiratory gas analysis (Aeroscan)

Pulse/HRV measurements (Polar, H7), general fitness (FITBIT Versa 4)

Bioelectrical impedance analysis (BIA)

Task Force Monitor (MedX5 evaluation program of the Task Force Monitor)

Measuring parameters

VO2 (sub)max., phase angle, BCM, stress index (autonomous control of the heart LF/HF), baroreceptors (BRS, blood pressure regulation), slopes (number of BRS sequences), sleep quality (nocturnal regeneration).

Action/resting potential (A/R): Ratio of action and threshold potential. A membrane is electrically charged. This is termed membrane potential. If there is no action potential, it is called the resting potential.

Baroreceptor sequence, slopes (BRS): A baroreceptor sequence (slopes) reflects the interaction of blood pressure fluctuations and the immediately following changes in pulse rate. For the assessment, the number of sequences is counted and the BRS value is required.

Baroreceptors (BRZ): This value also enables the assessment of control by the autonomic nervous system. A sequence results from the interaction of blood pressure fluctuations and immediate heart rate changes.

Low frequencies/high frequencies (LF/HF): Permanent fluctuations in circulatory values are influenced and controlled by the autonomic nervous system. These changes are not random and have specific rhythms (frequencies). A distinction is made between low (LF) and high (HF) frequencies. LF rates are observed in stress, fear, and panic.

Regeneration hormones (RH): In the nocturnal regeneration phases, hormones (testosterone, melatonin, STH) are released when we get restful sleep. Sleep duration and sleep quality are measurable.

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Results - Excerpt from the ISGM test report

The results for both groups were summarized and the mean values formed. It is noticeable that there were significant differences for the individual parameters compared to the recorded values of the different BeoKeys.

The Beosigner[®] offers significant improvements in regulation, regeneration, and vital signs. Striking was the significantly shorter vitalization and impact time compared to the Vitalizer.

The Beosigner® Basic already improves the epigenetic deficits and the effect can be intensified indicatively with the BeoKeys.

Due to the specialization of the individual BeoKeys, the user achieves optimal use with significantly different improvements.

The values of the examination group A (A1) based on all vital sign parameters were on average 16% (18%) better than the control group B (B1). On spirometry, the group showed a 6.4% (5.8%) improvement in VO2 submax. Improvements compared to the control group were also in the areas (BCM) with 9% (8.2%) and the improvement in the regenerative capacity was 24% (22%).

Comparison of the effect of the Beosigner[®] + selected BeoKey in relation to the Beosigner[®] Basic. All results are to be understood as a plus to the effect of the Beosigner[®] Basic.

The following is about the different effects of the BeoKeys, which at the same time overlap in their effects.

BeoKey Power

A/R: 29 %: The action potential has improved significantly. This is the electrical voltage at the cell membrane, specifically the potassium-sodium pump. The exchange of ions at the cell membrane, which is very important for bringing nutrients into the cell and removing waste products from the cell. This is essential to keep the cell membrane supple and to enable and normalize the metabolism and energy build-up in the cell. Get it above the normal range so that people who have been weak for a long time can achieve an increased performance potential again. In other words, power gives power.



BRS: 29% and BRZ: 22% indicate strong positive changes such as a significant improvement in the ability to regulate at the organic level. Adaptation was measured via blood pressure and heart rate. These significant improvements indicate that (long-term) exhausted people can regain a better ability to regenerate organically. Self-awareness is improved.

Summary

More energy, more performance. Faster and better recovery. Metabolic processes are optimized. The BeoKey Power can help with recovery from constant tiredness and phases of exhaustion.

BeoKey Focus

The values BRZ at 26% and BRS at 28% indicate a significant improvement in the regenerative capacity of the organ structures. This component is also of great importance for older people, since this ability tends to diminish over time.

The value of 26% LF/HF shows the balancing effect on the sympathetic and parasympathetic nervous system. It has a stimulating effect on areas where it is needed but also a corresponding stabilizing effect when we need clarity, the ability to concentrate to get out of a panic or fear situation. An important regulation, especially for people who have increased fear and panic or who lack the ability to fully concentrate.



The main aim in the regenerative phase is to help rebuild certain protein structures or to set a targeted impulse to build up protein structures such as dopamine or tryptophan, serotonin, and melatonin. The short- and long-term memory is optimized when the hippocampus is addressed. The ability to coordinate improves when the diencephalon, the mesencephalon, is addressed.

Summary

Concentration, serenity, calm and contentment are promoted, but activity and dynamism are also supported as required. The function of body systems generally improves.

BeoKey Stability

The strengthening of the hormones becomes clear with the RH value of 42%. The STH (somatotropic hormone, growth hormone, anti-aging hormone) was tested, as well as melatonin and testosterone. All 3 are important. Somatotropin is one of our strongest immune-stimulating hormones and is very important for cell and tissue regeneration. The melatonin is responsible for a peaceful and balanced sleep. Sleep phases are very important for overall regeneration and healing. Testosterone, also known as the male hormone, is important for tissue development, regeneration, and physical fitness.

The very positive development of BRZ at 32% and BRS at 30% indicates that organ functions are becoming more responsive to vegetative control. Hormone stabilization is particularly strong during regeneration.



The autonomic nervous system is strengthened, which is also connected to the adrenal glands. The interaction of sympathetic and parasympathetic or vagus, thalamus, and hypothalamus, as well as the adrenal glands is supported. Hormone release can occur, which strengthens the vegetative nervous system or can weaken it again if the hormone release change (Help with sensory overload problems). The higher the ability to regenerate, the higher the hormone value and as a result our hormone balance is better and more balanced. This in turn reduces stress. At the same time, the LF/HF values have a positive influence of 22% on the regulation of the autonomic nervous system. Which indicates improved stress management.

Summary

Components of the vegetative control system come into balance. Hormone balance evens which result in more inner peace, relaxation, mental balance, and better stress management. Moreover, improved self-awareness (proprioception) and improved functioning of the body systems. Stability promotes the regeneration ability of the cells – and thus the overall state of health.

BeoKey Joy

The strong values BRZ with 24% and BRS with 27% show that the BeoKey affects the regenerative capacity of the organ structures. These values indicate a very stable interpretation of the stable nervous system, which has a direct impact on feelings of anxiety.

With an increase of 16%, the A/R value indicates an increased action. This in turn suggests more drive and purposeful energy, which in turn is important for vitality and positive and constructive thinking.

The RH value of 16% (boosting hormones) in connection with the measurement via the baroreceptors and the A/R value make it clear that the influence of BeoKey Joy promotes faster recovery on the hormonal level as well as on the vegetative level.



Summary

A stable nervous system, hormonal balance and energy are fundamental for well-being, joy, drive, activity and to overcome fears and worries. People are no longer quickly thrown off course, which is extremely important, especially for people who are deeply sad or depressed.

Overall summary



Beosigner[®] Basis BeoKey und die vier BeoKeys Power, Focus, Stability und Joy

The Beosigner[®] Basis itself leads to a significant improvement in regulation, regeneration, and vital signs on a neurophysiological level. It already combines many elements of the BeoKeys in its basic version. In their specification, the individual indications of the BeoKeys – also on a neurophysiological level – have an even stronger effect. Each BeoKey according to the intended indication, which becomes clear in the survey.

The fact that the BeoKeys differ in their effect is also made clear by the following overview. Simultaneously, the BeoKeys overlap in their mode of action, which makes sense and is necessary in view of the purpose of the respective BeoKey and in interaction with the other programmed components.

The user can achieve optimal use with significantly different improvements due to the specialization of the individual BeoKeys.

Explanation of the measuring methods

Respiratory gas analysis (Aeroscan)

In the respiratory gas analysis, the human breath was examined during physical exertion. Respiratory volume, breathing rate, oxygen uptake and carbon dioxide release are measured. They are used to assess performance and fitness.

HRV measurements (Polar, H7 [chest belt measurement])

This measurement provides information about the state of the autonomic nervous system, the interaction of the sympathetic and parasympathetic nervous system and their ability to regulate. The vegetative nervous system is therefore also an indicator of stress. Vital functions are controlled. This influences, among other things, the sequence of heartbeats. The measurement of these beat intervals of the individual heartbeats is used in an HRV measurement to obtain information about the functional status of the entire organism.

Bioelectrical impedance analysis

The impedance provides measured values for resistance, reactance, and phase angle. The phase angle is considered an important parameter for assessing health, training, and nutritional status. It is an indicator of the vitality of muscles and organs. Resistance and reactance provide information about body composition.

Task Force Monitor (MedX5, evaluation program of the Task Force Monitor)

1) Regarding LF/HF:

Spectral analysis can be used to determine the activity of the human autonomic nervous system as literature shows. The tonus is represented by the high frequency band of the heart rate variability (HF band 0.15-0.4Hz) and by the low frequency band of the blood pressure variability (LF band 0.05-0.15Hz). Literature speaks of a frequency analysis. Fluctuations are controlled and influenced by the autonomic nervous system. These changes are not random and have specific frequencies. A distinction is made between low (LF) and high frequencies (HF). Low frequencies are observed in stress, fear, and panic. The larger the proportion of H-frequencies, the better the vitalization and the influence on improving the state of health.

2) Regarding BRZ/BRS

The BRZ value enables regulation and control by the autonomic nervous system to be assessed. Baroreceptor sensitivity (BRS) is the sensitivity of human blood pressure regulation. The baroreceptors "measure" the blood pressure of the cardiovascular system and pass this information on to the brain stem. The heart rate (HR) is controlled based on this information from the baroreceptors. In healthy subjects, the heart rate decreases when the blood pressure increases and conversely the heart rate increases when the Blood pressure drops. This cardiovascular control system can be examined using the sequence method (e.g., task force monitor). A baroreceptor sequence (slopes) reflects the interaction of blood pressure fluctuations and changes in pulse rate. The number of sequences and the BRS value are used for the assessment.

Scientific sources:

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