Documented Benefits and Efficiency of Devices at B.Hacking Studio

A Compilation of Clinical Studies Supporting
Our Advanced Wellness Technologies

B.Hacking
STUDIO

Summary:

This document compiles various clinical studies and publications that demonstrate the effectiveness and benefits of the devices offered at B.Hacking Studio. It covers a range of wellness technologies including infrared therapy, cryotherapy, IHHT (Intermittent Hypoxic-Hyperoxic Training), photobiomodulation, vibration platforms, and more. Each section provides insights into the positive effects of these devices, such as enhanced detoxification, improved metabolic functions, cardiovascular health, muscle recovery, and stress management. The findings help highlight the impact of these therapies on overall wellness, providing scientific backing for their application in personalized wellness journeys.

Contents

Infrared Therapy Iyashi Dôme

Detox:

Clinical trial – A clinical trial* was carried out in Switzerland on 22 patients. Samples of sweat were taken from each patient's body after a ***session of Iyashi Dome lasting 25 minutes.*** The sweat was taken using a Pasteur pipette from the patient's chest and arms. No metal utensil was used when taking sweat samples. The Laboratory MGD in Geneva (Switzerland) analysed the sweat and then compared the samples with the analysis of urine samples from the same patients. "Analysis of the chart in figure 2 shows that the Iyashi Dome increases the amount of toxic heavy metals eliminated such as Strontium, Barium, Nickel, Lead, Molybdenum, Tellurium, Chromium, Cobalt, Arsenic, Cadmium, Aluminium and Copper. This chart shows that the quantities of heavy metals are higher than the average quantity of 514µg/l, showing particular effectiveness with regards to the elimination of Aluminium. [...]

Conclusion – "Analysis of 2ml of sweat taken from patients who underwent Iyashi Dôme Far Infrared sessions lasting 25 minutes demonstrates that there is a real impact on the elimination of heavy metals from the body. Simultaneous analyses of urine samples show the heavy metals are essentially eliminated through sweat. The action is particularly efficient with regards to the elimination of Aluminium."

» ***Read the publication about detox***

Slimming:

The deep sweating experienced during an Iyashi Dôme session is the equivalent of running 20 kilometres. The production of up to 1,200 ml of sweat results in the average elimination of 600 kilocalories at each session.

Clinical trial – Global results are analysed by the summation of before and after scores. Evaluation protocol for Iyashi Dome weight loss.
18 volunteers, aged 25 to 57.
No change whatsoever in nutrition or physical activity was prescribed during the protocol.

Results obtained with the device indicate that the Iyashi Dome is efficient for weight loss, skin quality enhancement, relaxation and reduction of the appearance of fine lines. The results reveal a 100% satisfaction rate of the volunteers who participated in the treatment programme.

- Over 2 months, at a rate of 2 sessions a week lasting 30 minutes each (i.e.: 16 sessions), the average weight loss was 3.4kgs – weight loss of up to 6kgs was observed.
- Reduction of 1 to 2 dress sizes.
- Loss of 2 to 3% body fat.

Dr Joakim Valero

Trial performed with Class 3 medical measuring device TANITA

» ***Read the publication about weight loss***

Anti-Aging:

Clinical trial – [...] The study was carried out on 13 patients, from 31 to 63 years old, with skin phototype between II and IV according to the Fitzpatrick Classification Scale. The 8 Iyashi Dome sessions each lasted for 30 minutes and were carried out twice a week over four weeks.

In order to take the research further, biometric measurements were carried out on both the face and body, using the Cutometer® to measure skin elasticity [...], the Corneometer® to measure skin hydration and the Mexameter® to verify the level of haemoglobin and melanin concentrations in the skin [...]. Finally, the Iyashi Dome's actions on dermis thickness of the face and body were visualized and measured using High Frequency Doppler Echography. These measurements establish the increase or decrease in thickness of the dermis and, therefore, of the collagen and elastin fibres that compose the skin's connective tissue.

Conclusion – [...] The far infrared rays emitted by the Iyashi Dome® are effective in improving the skin's quality and physiological properties [...]. More specifically, after 4 weeks' use the product improves skin density with an increase in the thickness of the dermis of both face and body, improves facial skin radiance, decreases facial skin roughness, decreases facial wrinkle volume, improves skin hydration in the face and body, improves the complexion (evenness and luminosity of facial skin), improves skin elasticity and firmness of the body and face, stimulates skin microcirculation and reduces the signs of skin ageing. The product was judged to be effective on all skin phototypes and considered as being pleasant to use.

» ***Read the publication about anti-ageing***

Whole-Body Cryotherapy in Athletes: From Therapy to Stimulation

The review on Whole-Body Cryotherapy (WBC) highlights its use in sports for both therapy and recovery. The key benefits found:

- **Reduces Inflammation:** WBC helps decrease inflammation, speeding up recovery from injuries and muscle soreness after intense exercise.
- **Pain Relief:** It reduces pain and discomfort, making it easier for athletes to recover after workouts or injuries.
- **Fights Oxidative Stress:** WBC boosts the body's ability to fight off cell damage caused by exercise, helping protect muscles and tissues.
- **Improves Cholesterol Levels:** Regular WBC sessions can lower "bad" cholesterol (LDL) and raise "good" cholesterol (HDL), supporting heart health.
- **Balances Hormones:** It reduces stress hormones like cortisol and increases testosterone, which can help with recovery and performance.
- **Boosts Metabolism:** WBC stimulates fat burning and energy use, which might help with weight control and metabolic issues like obesity.
- **Helps Muscle Recovery:** It reduces muscle damage markers, aiding faster recovery from tough workouts.
- **Supports Bone Health:** WBC may help prevent bone loss and promote bone healing after injuries.

Overall, WBC helps athletes recover faster, reduces pain, and can even improve metabolic health and fat burning.

» ***Read the full publication***

Preliminary Overview of the Clinical Relevance of Whole-Body Cryotherapy explores the therapeutic benefits of WBC, focusing on its role in enhancing recovery and wellness.

Key Findings:

- **Anti-inflammatory Benefits:** WBC helps reduce inflammation by lowering inflammatory markers, benefiting those with joint pain and injuries.
- **Pain Reduction:** It aids in managing chronic pain and improving mobility.

- **Faster Muscle Recovery:** WBC accelerates recovery after intense physical activities, reducing soreness.
- **Improved Circulation:** It enhances blood flow, which promotes healing and better energy levels.

» ***Read the full publication***

IHHT Cellgym

Metabolic Wellness:

Studies demonstrate that IHHT improves glucose metabolism, insulin sensitivity, and body composition in people with metabolic syndrome. It effectively reduces body weight, decreases fat mass, optimizes blood glucose levels. It also enhances blood vessel function and overall cardiovascular health.

Read the full publications:

- ***Publication #1***
- ***Publication #2***
- ***Publication #3***

Cardiovascular Wellness:

Research suggests that IHHT supports better blood flow and helps stabilize blood pressure. Studies indicate it enhances vascular function, promoting balanced circulation and improving the body's ability to maintain stable blood pressure during physical activities or postural changes. These effects contribute to overall cardiovascular wellness and circulatory resilience.

Read the full publications:

- ***Publication #1***
- ***Publication #2***

Post-COVID Support:

Research shows that IHHT has been beneficial in aiding post-COVID recovery. It supports lung function, reduces fatigue, and enhances the overall recovery process for individuals recovering from COVID-19. These findings suggest that IHHT can play a valuable role in helping patients regain strength and improve their breathing, contributing to a smoother rehabilitation journey.

Read the full publications:

- ***Publication #1***
- ***Publication #2***

Oxidative Stress and Antioxidant Balance:

Research suggests that IHHT helps the body manage oxidative stress by boosting its natural antioxidant defences. It increases the activity of antioxidant enzymes, reducing oxidative damage, which is particularly useful in protecting cells, the heart, and other vital organs from stress caused by high-intensity exercise. These effects contribute to better overall cellular function and resilience.

» ***Read the full publication***

Athletic Performance:

The study on intermittent hypoxic training (IHT) in endurance athletes found several key benefits, including improved maximum oxygen consumption (VO2max), increased performance in endurance activities, and faster recovery. After a three-week IHT regimen, the athlete experienced enhanced aerobic capacity, better performance in a 3-km walk, and improved tolerance to higher workloads with a lower heart rate. An increase in reticulocytes and iron-binding capacity suggested better oxygen transport efficiency.

» ***Read the full publication***

Orthostatic Reactions:

Research indicates that IHHT supports better orthostatic stability, which helps maintain steady blood pressure and heart function during position changes. This can reduce the chances of dizziness or fainting in people prone to orthostatic hypotension by improving the body's ability to regulate blood pressure when standing or moving.

» ***Read the full publication***

Respiratory Wellness:

Research suggests that IHHT supports better respiratory function by improving lung capacity and reducing symptoms in individuals with chronic conditions like asthma. It has shown promise in enhancing overall breathing and lung performance, making it a valuable tool for managing respiratory wellness and promoting better long-term function
.

» ***Read the full publication***

Photobiomodulation (PBM)
TheraLight 360+ & JOOVV

Inflammation:

PBM has demonstrated various wellness benefits, especially in reducing inflammation. Key effects include enhanced cellular energy through improved mitochondrial function and ATP production, better management of oxidative stress by regulating reactive oxygen species, and reduced inflammation in muscles, joints, lungs, and the brain. PBM has also been shown to aid recovery from injuries, support wound healing, and improve muscle performance. Its ability to modulate inflammatory responses suggests potential in addressing chronic conditions related to inflammation.

» ***Read the full publication***

Skin Wellness:

Research shows that low-level light therapy (LLLT) can help improve skin by supporting natural healing and revitalizing the skin.

» ***Read the full publication***

Mood Support:

The study suggests that bright light therapy can effectively boost mood and reduce symptoms of depression, offering a natural way to enhance emotional well-being.

» ***Read the full publication***

Muscle Recovery:

Research indicates that PBM therapy helps reduce muscle fatigue, speeding up recovery and improving endurance for better performance in sports and physical activities.

» ***Read the full publication***

Stress Response:

The study shows that red light at a wavelength of 625 nm can support the body's ability to manage stress, promoting a sense of calm and balance throughout the day.

» ***Read the full publication***

Cognitive Wellness:

The article highlights the potential of PBM using red and near-infrared light as a tool for brain wellness and prevention. It may support brain health by promoting balance, calming the mind, improving focus, and helping the brain respond better to daily stressors. PBM can also enhance overall mental clarity, cognitive function, and relaxation. This non-invasive light exposure might offer a natural way to support brain vitality and well-being, making it a potential tool for maintaining cognitive health and enhancing wellness routines.

» ***Read the full publication***

Vibration Platform Power Plate

Blood Circulation:

The study found that applying low-frequency multidirectional vibrations (30 Hz) to the skin in a horizontal position can significantly increase blood flow by widening the veins, especially after 6 to 10 minutes of vibration. Although the effect on arteries was less pronounced, the enhanced circulation in the skin suggests that this technique could be beneficial for improving blood flow and circulation. These promising results indicate the potential for using this method in treatments aimed at supporting vascular health and circulation.

» ***Read the full publication***

Research indicates that vibration training can significantly improve skin blood flow and overall circulation, supporting better tissue health and faster recovery from muscle soreness and injuries

» ***Read the full publication***

This study examined the effects of whole-body vibration (WBV) combined with exercise and vibration alone on skin blood flow (SBF). It involved 45 participants split into three groups: vibration with exercise, exercise only, and vibration only. The results showed that vibration alone significantly increased SBF, doubling the blood flow for at least 10 minutes after the intervention. This suggests that WBV, even as a passive technique, can improve blood flow in individuals with healthy microcirculation, supporting its potential therapeutic benefits for circulation and tissue health.

» ***Read the full publication***

Muscle Activation and Recovery:

WBV therapy is a helpful approach for managing chronic lower back pain. It activates muscles quickly, improving strength, balance, and stability. This therapy is gentle on joints and ligaments while still working deep muscles, which helps speed up recovery. It can also make other treatments, like spinal adjustments, more effective, with shorter, efficient sessions that work for people of all fitness levels. WBV provides a simple, non-invasive way to support back pain relief.

» ***Read the full publication***

Stronger Bones:

Whole-body vibration therapy has shown potential benefits for postmenopausal women with osteoporosis. Studies suggest it can help increase bone mineral density, particularly in the spine and femoral regions, by stimulating bone formation and improving muscle strength and balance. This can reduce the risk of falls and fractures. It may also aid in pain relief and enhance overall physical fitness.

» ***Read the full publication***

Weight Management:

Research presented at the European Congress on Obesity found that using vibration plate machines, in combination with a calorie-restricted diet, helped overweight and obese individuals achieve long-term weight loss and reduce harmful abdominal fat more effectively than conventional exercise. Participants using the vibration plate lost more body weight and visceral fat, maintaining these results for a year. However, experts emphasize that vibration plates should be used alongside healthy diets and exercise, not as a replacement

» ***Read the full publication***

Flexibility:

Using a Power Plate routinely has been shown to help increase flexibility. In a study conducted using whole-body vibrations indicated that the vibration had a statistically significant influence on flexibility

» ***Read the full publication***

BioCharger

Several studies support the efficacy of the BioCharger:

- **Heart Rate Variability (HRV):** A study showed a 31% reduction in the stress index, a 20% gain in metabolic energy, and an 8% improvement in functional state after using the BioCharger.
- **What is HRV you might ask?** It's a measure of how our body adapts and responds to stress. To get granular, it's specifically the variance in time between the beats of your heart. For example, if your heart rate is 60 beats per minute, it's not actually beating once every second. Within that minute there maybe 0.9 seconds between two beats and 1.15 seconds between two others. The greater this variability the better.
- **Cellular Uptake and Function:** Research indicates improved cellular function through high-voltage pulses and photonic stimulation.
- **Wound Healing:** Pulsed radiofrequency stimulation has been shown to accelerate wound healing and reduce joint stiffness and pain.

From Nikola Tesla to George Lahovsky, scientists, inventors, and pioneers alike have led the way in new energy technologies like the BioCharger. Thanks to their insight, scientists and researchers continue to discover ways to optimize nature's energy.

High-Voltage

Stimulates improved cellular function:

- Modeling of In Vivo Tissue Electroporation and Cellular Uptake Enhancement
- Corona Ion Deposition: A Novel Non-Contact Method for Drug and Gene Delivery to Living Systems
- The Combined Effect of Heat and Corona Charge on Molecular Delivery to a T-cell Line In-Vitro
- Mechanisms involved in gene electrotransfer using high- and low-voltage pulses—An in vitro study

Supports better cognitive function:

- Cognitive effects and autonomic responses to transcranial pulsed current stimulation
- Long-term efficacy and cognitive effects of voltage-based deep brain stimulation for drug-resistant essential tremor

Frequencies and Harmonics:

Accelerated recovery and regeneration

- Effect of Pulsed Radio Frequency Stimulation on Wound Healing: A Double-Blind Pilot Clinical Study

Reduce stiffness in joints

- Pulsed Radiofrequency of the Composite Nerve Supply to the Knee Joint as a New Technique for Relieving Osteoarthritic Pain

Light (Photomodulation):

Mood enhancement

- Light therapy for non-seasonal depression: systematic review and meta-analysis
- Bright light therapy for depression: A review of its effects on chronobiology and the autonomic nervous system

Reduces inflammation & pain

- Low-level laser (light) therapy (LLLT) on muscle tissue: performance, fatigue and repair benefited by the power of light
- Low-Level Laser Therapy

PEMF:

Improves circulation & blood oxygenation

- Increases in microvascular perfusion and tissue oxygenation via pulsed electromagnetic fields

Reducing stiffness in joints

- Pulsed electromagnetic field therapy for management of osteoarthritis-related pain, stiffness, and physical function: clinical experience in the elderly

Zerobody Dry Float

Stress management:

The study on Floatation-REST highlights significant benefits for individuals with anxiety and depression. A single float session led to substantial reductions in anxiety, stress, muscle tension, and depression, while boosting mood, serenity, and overall well-being. These effects were especially notable in participants with severe anxiety, and no major safety concerns were reported. This suggests that Floatation-REST could be a promising short-term treatment for improving mental health and relieving symptoms of anxiety-related disorders.

» ***Read the full publication***

The study on sensory isolation in flotation tanks demonstrated significant benefits for healthy participants. Over seven weeks, participants who underwent flotation-REST sessions experienced reductions in stress, anxiety, depression, and pain, while also reporting improved sleep quality and optimism. The study suggests that flotation-REST could be an effective preventive health-care intervention by promoting relaxation, enhancing psychological well-being, and potentially preventing future health issues related to stress. These findings underscore the potential of flotation-REST for improving general health and well-being.

» ***Read the full publication***

This pilot study explored the effects of flotation-REST for generalized anxiety disorder (GAD). The treatment group saw significant improvements in GAD symptoms, emotional regulation, sleep, and depression compared to a control group. About 37% of participants in the treatment group achieved full GAD remission. These benefits, except for depression, were sustained after six months.

» ***Read the full publication***

This pilot study explored the benefits of combining flotation-REST and psychotherapy for individuals with high stress-load and burnout symptoms. Six participants, all on the verge of sick leave due to burnout, underwent a 10-week treatment while continuing their regular work. Results showed significant reductions in depression, anxiety, pain, and an improved outlook on life. None required sick leave post-treatment.

» ***Read the full publication***

Athletic Performance and Sleep:

The study on flotation-restricted environmental stimulation therapy (FLOAT) highlights several benefits for athletes' post-exercise recovery. FLOAT improved performance in activities like jumping and sprinting, increased pain thresholds, and reduced muscle soreness and fatigue compared to passive recovery. Additionally, athletes reported better sleep quality after FLOAT, with improvements in sleep efficiency and duration. These findings suggest that FLOAT may be an effective method for enhancing both physical recovery and sleep following exercise.

» ***Read the full publication***

Neurosonic Recliner

Sleep Disorders:

A study on the effects of Neurosonic low-frequency therapy on the sleep quality of patients suffering from primary insomnia , conducted at the Helsinki sleep clinic (year 2013) under the leadership of sleep researcher Markku Partinen, mapped the sleep disorders of 16 people using a randomized comparison experiment. Sleep actigraphy measurements showed a significant decrease in movement during sleep, which directly correlates with deeper sleep. Surveys related to the study also found significant changes in anxiety and fear states, which can significantly disrupt sleep. 70% of the examined persons received help in five treatment sessions, which significantly reduced anxiety, obsessive-compulsive symptoms and fearful states.

Heli Haapaniemi's research (year 2013) focused on the effects of the Neurosonic method in the treatment of stress and sleep disorders. The study was based on Neurosonic chair treatment sets, evaluation of subjective sensations and biosignal measurements, which measured the electrical activity of the heart (EEG, EMG and ECG). Based on the research data, it can be concluded that the method affected the function of the autonomic nervous system by increasing the activity of the parasympathetic part of the autonomic nervous system that promotes recovery. This was also noticeable from the heart rate variability results, which indicated that the subjects were more relaxed after the research period than before.

Recovery:

The research carried out by Veera Ikonen (year 2013) examined the acute effects of the Neurosonic low-frequency method on variables describing physiological and subjective recovery. The study measured the immediate effects of the Neurosonic method after sports training on resting heart rate, heart rate variability, blood lactic acid concentration, the feeling of recovery and the quality of the next night's sleep. As a summary of the research results, it can be stated that even a single Neurosonic treatment seems to have a positive effect on the activation of the recovery nervous system and recovery from physical exercise.

Inflammation and Metabolic State:

The study examines how whole body vibration (WBV) affects omental macrophage polarization and fecal microbiome composition in a mouse model of type 2 diabetes. WBV was shown to skew macrophages toward an anti-inflammatory M2 state, and also modified the fecal microbiome by increasing beneficial microbes like Alistipes. These findings suggest that WBV may help reduce inflammation and improve metabolic health, offering a potential therapeutic approach for conditions like obesity and diabetes.

OligoScan

The Science Behind Spectrophotometry:

Spectrophotometry is grounded in the principle that different molecules absorb light at specific wavelengths. When light passes through or reflects off a sample, the spectrophotometer measures the intensity of light at various wavelengths. By comparing these measurements with known standards, the device can identify and quantify the substances present in the sample.

In the context of the OligoScan, this means the device can accurately measure the concentration of minerals and heavy metals by analyzing the light reflected from the skin. The precise calibration and advanced algorithms used in the OligoScan ensure that the readings are both accurate and reliable.

The OligoScan is a non-invasive technology using spectrometry to measure micronutrients and heavy metals in epithelial cells. The system is designed to help evaluate mineral deficiencies or heavy metal overloads within tissues, offering valuable data for preventive strategies and nutritional advice.

- **Accuracy:** OligoScan results demonstrated acceptable accuracy, with fluctuations between 3-8% being within the standard measurement range.
- **Practicality:** The OligoScan method proved to be effective for tissue assessments, especially in cases of identifying heavy metal overload or mineral deficiencies.
- **Application in Preventative Medicine:** It's highlighted as a supplementary tool in preventative medicine, especially useful for real-time assessments without invasive methods like traditional blood draws.

The OligoScan offers a reliable, non-invasive approach to micronutrient and heavy metal assessment. The system provides good sensitivity and repeatability, making it a useful tool in the fields of nutritional therapy and detoxification processes.

» ***Read the full publication***

The study ***OligoScan - Messen von Mineralien, Spurenelementen und toxischen Metallen auf Gewebsebene*** (July 2016) highlights the following key points:

- **Lack of Standardized Testing:** There is no globally recognized standard for measuring minerals, trace elements, and toxic metals. Standard tests in blood, urine, or hair do not accurately reflect the micronutrient levels in cells and tissues.
- **OligoScan Methodology:** The OligoScan uses spectrophotometry based on the Beer-Lambert law, where the concentration of a sample is determined by how much light it absorbs. This non-invasive technique allows for real-time measurement of micronutrients at the tissue level.

- **Benefits:** The process is quick, non-invasive, and allows health practitioners to make immediate decisions about therapy. It also helps in monitoring both therapeutic success and potential overload reactions.

This approach provides a more accurate reflection of the body's current micronutrient status in tissues, offering a valuable tool for personalized guidance and management.

Tanita Body Composition Analyzer

Bioelectrical impedance analysis (BIA) is a widely used, non-invasive, and cost-effective method to measure body composition.

This overview examined BIA-derived body fat percentages (BF%) across 55 studies of healthy individuals aged 6 to 80 years. The results show significant variation in BF% depending on population and age, with BIA providing better insights into body composition compared to body mass index (BMI).