



## Relaxation Training (RT)

**The Relaxation Training is an audio training that trains your capacity to relax and recover.**

Relaxation Training contains monaural beats, binaural beats and isochronic tones at Theta 4Hz and 8Hz, and bilateral sound (0.1Hz).

Theta 4Hz and 8Hz brainwave entrainment supports deep relaxation and ability to let go, supporting recovery and regeneration.

Bilateral sound entrains brain activity in the range of Delta 1.5Hz and can contribute towards a deepening of relaxation and the processing of traumatic events (Delta).

**Daily listening to this track is expected to have the following effect in daily life:**

- Improved ability to relax and recover
- Reduced strain and tension
- Increased parasympathetic activity
  - Anti-inflammatory
  - Cardio-protective
  - Regenerative
  - Rejuvenating
- Reduced negative impact of stress and anxiety
- Improved general wellbeing

Relaxation Training can be listened to in the morning on waking and/or at night, for example before going to sleep or when you need to recover from strenuous activities.

For best and permanent effect, I recommend listening to this 30-minute track 1x - 2xdaily for a period of 6 weeks, and thereafter less frequently.

It may take between 3 and 5 weeks to see the full potential effect of this training.

**Only listen with headphones or earphones to this sound file to experience the brain entraining effect of the binaural beats. The head/earphones should be of reasonable quality ideally a flat frequency response between 20Hz and 20.00Hz.**

You can monitor the effect during the session (Relaxation Training) during the session, and by tracking the long-term effect of the training when assessing autonomic health 1x a week at the same time of the day (prior to training).

### **The Effect of the Relaxation Training (RT) on the autonomic nervous system**

During relaxation training, an increase of HF power can be observed, indicating an increase in parasympathetic activity. Simultaneously, a reduction in VLF, LF and MF can be tracked during the training. As a result, the HF/[LF+HF] ratio is expected to rise.



## Relaxation Training (RT)

***A targeted long-term effect is an overall increase in LF power, a lowering of the LF/HF ratio, and an increase of the LF/[HF+LF] ratio, indicating a shift towards increased parasympathetic and reduced sympathetic activity observed over time in the AHA. This indicates an improved capacity to let go, recover from strain and recuperate.***

***For people who have a relatively high parasympathetic activity at the outset, relaxation exercise may not be initially indicated or even contra-indicated, and the training should exclusively focus on RFT and ET.***

**Relaxation Training is particularly indicated, when your Autonomic Health Assessment shows:**

Low levels of High Frequency (HF) – low parasympathetic activity

Low relaxation Index (LF/(LF+HF))

High levels of Low Frequency (LF) with low Engagement Index MF/LF <1 - high sympathetic activity

High Autonomic ratio (LF/HF > 4.8) with low Engagement Index MF/LF <1 – relatively high parasympathetic activity

Low SDNN

**For explanation please Result Guide**

### RELAXATION TRAINING (RT) INSTRUCTIONS

Lie down in a quiet, comfortable space, and avoid distractions or disturbances.

Connect your earbuds or headphones to your device.

Switch on the oximeter.

Open the app and wait until it shows that the oximeter is connected.

Chose "RUN" from the main menu.

Press 'Relaxation Training' and the Relaxation Training page will appear.

The duration of the training is by default 30 minutes.

At the end of your training, the history page will open and show you the results of your training.

You can export the data and track your progress.



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### DISCLAIMER

The user of the ***Relaxation Training***, agrees that training program is designed solely for health improvement, performance management, stress reduction, meditation, self-improvement, learning, aid in motivation, relaxation and experimentation. ***This application is not intended as a replacement for medical or psychological diagnosis and treatment. No medical or psychological claims are intended, express or implied.***

**Those meeting any of the following conditions, whether knowingly or not, should not use this application:**

- Epileptics
- Pregnant women
- Those wearing a pacemaker

**Those who should consult a qualified physician or therapist before the use of this product include:**

- Individuals under the influence of medication or drugs
- Individuals who have a history of severe mental illness
- Individuals who have a history of tinnitus

**This training is not to be used while under the influence of alcohol or other mood-altering substances, whether they are legal or illegal.**

**Finally, DO NOT LISTEN TO THE AUDIO FILE WHILE DRIVING OR OPERATING MACHINERY**

**The user of *the Relaxation Training* assumes all risks, waiving any claims against Adaptive Resilience Ltd. or London Integrated Health Ltd. and its affiliates for any and all mental or physical injuries. The user also agrees to assume liabilities when allowing other persons to access the Relaxation Training.**

In no case will Adaptive Resilience Ltd. or London Integrated Health Ltd. and its affiliates or distributors of the *Relaxation Training* be liable for chance, accidental, special, direct or indirect damages resulting from use, misuse or defect of its program, instructions or documentation.

The parties shall attempt to resolve all disputes arising out of this agreement in a spirit of cooperation without formal proceedings. Any dispute which cannot be so resolved (other than a request for injunctive relief) shall be subject to arbitration upon written demand of either party. Arbitration shall take place within forty-five days of receipt of the written demand, in London, United Kingdom, or at another location (or in whole or in part by phone or other means) if the parties so agree. The arbitration shall take place before an arbitrator chosen as follows: The parties shall each choose a representative, and the representatives shall choose an arbitrator. The arbitrator shall schedule an informal proceeding, hear the arguments, and decide the matter. Each party shall pay half the costs of the arbitration proceeding. The arbitrator shall not have the authority to award punitive damages or any other form of relief not contemplated in this Agreement. Regarding each issue submitted to arbitration, the decision shall be accompanied by a written explanation of the basis upon which it was arrived. Judgment upon the award, if any, rendered by the arbitrators may be entered in any court having jurisdiction thereof.



## Relaxation Training (RT)

# Relaxation Training and the Brain

**Relaxation Training entrains the brain into the following brainwave activity:**

- Low Beta (SMR) – 12Hz
- Low Alpha / High Theta (8Hz)
- Low Theta / High Delta(4Hz)
- Mid Delta 1.5Hz

**Entraining the brain in the Alpha range increases the MF power of HRV**

**Entraining the brain in the Theta/Delta range increases HF power of HRV**

**(Engagement Training entrains the brain at Alpha 10Hz)**

### Low Beta (SMR)

*Low Beta Waves (12 Hz – 15 Hz):* These are commonly referred to as “Beta 1” (*SMR brain waves*) waves and are in the lower cycles per second.

The lower range of Beta activity is often associated mostly with quiet, focused, balanced between inner and outer focus and concentration.

**Some with low beta brainwaves associated activities:**

- Awake
- Energy (mental and physical)
- Excitement
- Focus
- Sleep onset insomnia (SMR can help to fall asleep)
- Reduced feelings of anxiety and stress
- Improved mood
- Improved well-being
- Positive thinking

### Alpha

*Alpha brain waves* are considered slower brain wave activity with oscillations that range from 8 Hz to 12 Hz (cycles per second).

The alpha wave is typically produced by the right hemisphere of the brain, but often is synchronized across both right and left hemispheres on an E.E.G. Specifically, alpha waves are observed as being generated mostly from the occipital lobe during drowsiness and sleep.

Individuals that relax with closed-eyes tend to exhibit more alpha wave activity.

In fact, the alpha range typically becomes dominant when a person closes their eyes and focuses on relaxing. When you open your eyes, alpha wave activity becomes reduced.

Many researchers believe that alpha activity is linked to drowsiness, relaxation, and boosted mood.

Think of the alpha brain wave as playing an important role in helping people calm down. It bridges the gap between our waking state and our sleeping state.



## Relaxation Training (RT)

- **Some with alpha brainwaves associated activities:**
- Balanced mood
- Improved mood
- Calmness
- Creativity
- Day dreaming
- Decreased focus
- *Flow* state of mind
- Immune system modulation
- Peak performance
- Positive thinking and feeling
- Problem solving
- Relaxation
- Serotonin
- Slower visual acuity
- Visualization

### Theta

*Theta brain waves* are considered brain waves that oscillate between the frequencies of 4 Hz to 8 Hz (cycles per second).

Theta brainwaves are found to be predominant in young children.

The descriptions below relate to Theta brainwave activity in the Cortex and not in the Hippocampus.

### Theta waves have been linked to experiencing

- Emotions
- Daydreaming
- Intuition
- Relaxation
- REM sleep (accompanied by bursts of Gamma waves)
- Stress reduction
- Anxiety reduction
- Creativity
- Experience of emotions
- Hyper-focus
- Immune system modulation
- Long-term memory recall (childhood)
- Deep meditation
- Transition between waking & sleep

### Pathology:

- ADHD (increased Theta)
- PTSD (increased Theta)
- Impulsivity (increased Theta)



## Relaxation Training (RT)

### Delta

*Delta brain waves* oscillate between 0 Hz and 4 Hz (cycles per second) and are regarded as the slowest brain waves that humans can produce. They are typically produced during the deep stages of sleep (stage 3) and are involved in regulating unconscious bodily processes such as heart beat regulation, kidney functioning, and digestive functioning.

On average, females have been shown to have more delta wave activity than males. Delta waves typically are found in the thalamus or in the cortex. During sleep, delta waves tend to be dominant in the right hemisphere of the brain. Delta waves are also thought to be dominant in the thalamus to help coordinate reticular formation. Lesions to the brain are thought to disrupt delta production

Delta brainwaves are thought to help the body with recover and is thought to release various hormones including human growth hormone (HGH) at various frequencies. There are many benefits associated with having optimal delta wave functioning.

These include: getting a better night's sleep, boosted immune system functioning, as well as increased empathy.

Delta waves are typically generated in the right hemisphere of the brain and are linked to our subconscious and unconscious processes.

Infants tend to have predominant delta activity and as we age delta activity becomes increasingly sparse – even during sleep. While you are in a delta state of functioning, you have no conscious awareness.

### Some activities related to increased Delta brainwave activity

- Restoration and recovery
- Trauma recovery
- Anti-aging – release of DHEA and melatonin
- Deep sleep – slow wave sleep
- Empathy – awareness of other people's feelings
- GHB production - increase the production of gamma-hydroxybutyric acid (neuroprotective properties)
- Growth hormone (HGH) – during deep sleep
- Immune system – improved immune system functioning
- Intuition

### Pathology:

- Learning disabilities (too high Delta)
  - ADHD
  - Brain injury



## Relaxation Training (RT)

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*Biomedical Research* 29 (5) 242-250, 2008. Shr-Da Wu, Pei-Chen Lo, Department of Electrical and Control Engineering, National Chiao Tung University. Inward-attention meditation increases parasympathetic activity: a study based on heart rate variability. From the Abstract: "Phenomenon of the heart rate variability (HRV) during various meditation techniques has been reported. However, most of these techniques emphasized the skill of slow breathing (< 0.15 Hz). This paper reports our study on HRV during meditation, which emphasizes inward attention. Inward attention has been an important approach for the Zen-meditation practitioners to enter into transcendental consciousness. Two groups of subjects were investigated, 10 experimental subjects with Zen-meditation experience and 10 control subjects without any meditation experience. We analyzed HRV both in time and frequency domains. The results revealed both common and different effects on HRV between inward-attention meditation and normal rest. The major difference of effects between two groups were the decrease of LF/HF ratio and LF norm as well as the increase of HF norm, which suggested the benefit of a sympathovagal



## Relaxation Training (RT)

balance toward parasympathetic activity. Moreover, we observed regular oscillating rhythms of the heart rate when the LF/HF ratio was small under meditation. According to previous studies, regular oscillations of heart rate signal usually appeared in the low-frequency band of HRV under slow breathing. Our findings showed that such regular oscillations could also appear in the high-frequency band of HRV but with smaller amplitude.”

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