

Brain wave states

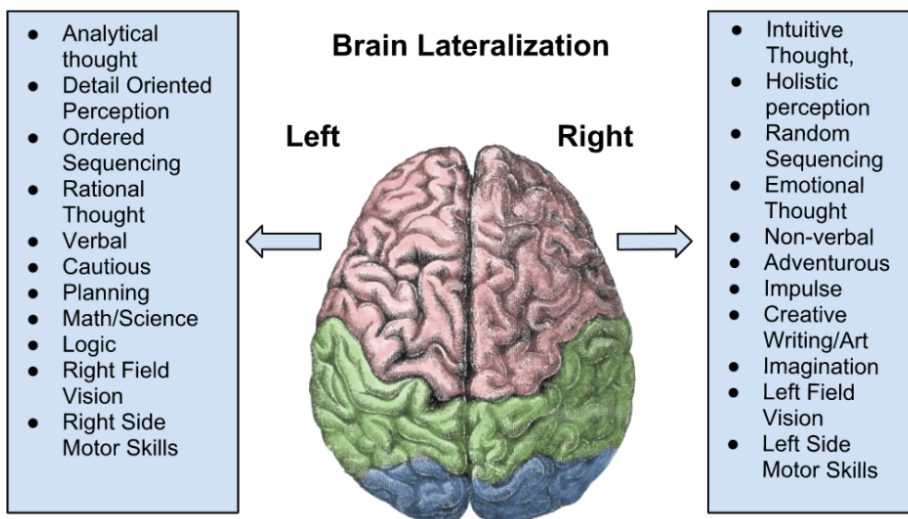
As our brains are infinitely complex, multidimensional directors for our thoughts and body, they use different frequencies for different tasks and contain over 100 *billion* neurons. The frequencies are a key factor in how the brain works and allows them various functions like conserving energy, segmenting zones or areas and using different pathways based off the frequencies. Our brains operate at different frequencies based on what is needed at the time. Since they are multidimensional and operate at near lightspeed, the frequencies used are critical in the day-to-day functions.

The brain, being an **intricate organ**, performs a lot of functions. The two sides of the brain communicate with one another to perform all vital bodily processes. Both the left and the right side of the brain look very much alike, but they too share some differences, especially in processing information.

Lack of integration between the different components of the brain could result in some forms of impairment.

The human brain has the **ability to recognize itself**. It can learn and adapt to change. Each side of the brain has a distinct function, which affects the person's ability to learn and adapt.

Information that enters the **left hemisphere** travel across the corpus callosum going to the right side of the brain and vice versa. The two hemispheres of the brain (right and left hemisphere) function interdependently.



Each of them has a role to play in the processing of information although the other is more dominant in certain functions. The process is called brain lateralization. The degree of **brain lateralization** is not the same in everyone.

Hemispheric dominance varies from one person to another. The hemisphere of the brain used in every activity is not always the same for every person. Some experts believed that the activities of the brain are influenced by the person's right-handedness or left-handedness.

Dolphins and whales are masters of the left/right lobe usage. When a Cetacean sleeps, only one side of the brain is asleep but allows FULL control of all body parts so there is zero brain lateralization taking

place. The Corpus Callosum has 100% neural connectivity and yet they can turn on and off the left and right lobes at will.

Understanding which part of the brain is dominant in a person is essential in determining which learning style is more effective. Left hemisphere dominant people are visual learners. On the other hand, right-hemisphere dominant people are **auditory learners**.

The left brain hemisphere is **needed for rational thinking** and logical skills such as mathematics and language. On the other hand, the right side of the brain is responsible for creative activities like arts and connecting to others in an emotional way. So, a person who is left brain dominant is logical while the right brain dominant is more emotional

The multi frequency brain

The brain can function with many different frequencies operating at the same time. Typically, when we sleep, they are just a few frequencies operating and those get to play dominate roles at different points in the night. At night, the brain goes into repair mode and runs through slower frequencies like Delta, Theta, REM. At this point, the brain is at rest and allows the synapses to recharge and make new fresh synapses and clusters.

During waking hours, the brain will use Alpha, Beta, Gamma states. These high energy states consume lots of energy and want to find the most efficient shortest pathways to use. The problem with that is we become adjusted to the routines of the brain and have a hard time when new decisions, experiences, emotions come into play. As these pathways are used over and over, the other clusters and synapse are no longer needed and so the connections no longer work.

When our brainwaves are out of balance, there will be corresponding problems in our emotional or neuro-physical health. Research has identified brainwave patterns associated with all sorts of emotional and neurological conditions. Over-arousal in certain brain areas is linked with anxiety disorders, sleep problems, nightmares, agitated depression, chronic nerve pain and spasticity.

Under-arousal in certain brain areas leads to some types of depression, attention deficit, chronic pain and insomnia. While instabilities in brain rhythms correlate with obsessive-compulsive disorder, aggressive behavior, rage, panic attacks, bipolar disorder, anorexia/bulimia, diabetes, hypoglycemia and explosive behavior.

Research has shown that although one brainwave state may predominate at any given time, depending on the activity level of the individual, the remaining four brain states are present in the mix of brainwaves at all times.

In this portion of the manual, we will be diving into the frequencies and not the chemical or electrical portions of the brain since they are a very different topic.

The importance of Binaural Beats






Binaural Beats are frequencies that are so close together, our ears can't tell the difference- yet the mind, can tell the difference. If we use headphones to isolate the 2 different frequencies, the ears will pass

that information on through the corpus callosum and the brain is forced to compare the frequencies in ear hemisphere. Since the frequencies are slightly different, the left and right hemisphere need to work together to make sense of the difference. By using binaural beats, we are able to strengthen and create more pathway in the corpus callosum and allow greater integration between the left and right hemisphere.

All of the Quantum Resonance music relies heavily on Binaural Beats. Studies indicate that binaural beats are safe and effective and can be listened to for extended periods.

Brain Waves

- Epsilon 0.1-0.5 Hz
- Delta 0.5-4 Hz
- Theta 4-8 Hz
- Beta 12-35 Hz
- Alpha 8-12 Hz
- Gamma 30-100 Hz
- Lambda 100- 200 Hz

<i>Brainwave state</i>		<i>State of consciousness</i>	<i>Appropriate for.....</i>
Hyper-gamma 100-200 Hz		Extraordinary states of consciousness and spiritual development?	Exceptional information processing, compassion and extraordinary focus?
Gamma 40-100 Hz		Higher level cognitive activities, REM sleep	Active thought and peak concentration, states of intense focus in meditation (visualization, compassion)
Beta 13-40 Hz		Awake and alert	Awake and mentally alert with high levels of awareness/cognition
Alpha 6-12 Hz		Deep relaxation	Relaxation, visualization, creativity, learning, TM meditation
Theta 4-7 Hz		Meditation, hypnagogic and hypnopompic, REM sleep, hypnosis	Meditation, intuition, dreaming, esp, hypnagogic imagery, trance, access to unconscious mind, zazen
Delta 1-4 Hz		Deep sleep	Deep meditation, deep sleep, healing and growth, HGH release, deep trance-like non-physical state, loss of body awareness, access to unconscious and collective unconscious
Epsilon 0.25-0.5 Hz			Extremely deep meditation

Epsilon

Epsilon waves oscillate at a frequency of 0.1 – 0.5 HZ

This is where full out of body experiences happen. The so-called Epsilon state is associated with 'suspended animation'; a state where you're alive but with no obvious signs – so no perceivable heartbeat, respiration, or pulse. It is said that some yogis and meditation masters can achieve this state. I have experienced this many times using the Crystal Bed.

Gamma Waves (30 - 100 Hz)

Gamma Brain Waves are the fastest brainwaves (high frequency) and the most recently discovered brain wave state, relate to simultaneous processing of information from different brain areas. These are involved in higher processing tasks as well as cognitive functioning. This is important for learning, memory, and information processing.

Knowledge of brainwave states enhances a person's ability to make use of the specialized characteristics of those states: these include being mentally productive across a wide range of activities, such as being intensely focused, relaxed, creative and in restful sleep.

Too much Gamma Waves result to Anxiety, High Arousal, Stress

Too little Gamma Waves result to ADHD, Depression, Learning Disabilities

Optimal Gamma Waves result to Binding Senses, cognition, information processing, learning, perception, REM sleep, happiness, greater awareness through senses, self-control, compassion

Gamma Waves can be increased through Quantum Resonance music, Meditation

Beta Waves (12 – 35 Hz)

Beta Brain Waves are associated with normal waking consciousness and a heightened state of alertness, logic, and critical reasoning. Having the right amount of beta allows us to focus on our tasks whether at school, work, or sports performance. However, exposing too many beta waves also results in too much stress. Stress produces stress chemicals like Cortisol which is really harmful to our body if it's too much.

Too many Beta Waves result to Anxiety, Adrenaline, High Arousal, Inability to Relax, Stress

Too little Beta Waves result to ADHD, daydreaming, depression, poor cognition

Optimal Beta Waves result to Conscious focus, memory, problem-solving

Beta Waves can be increased through Coffee, Energy Drinks,

Alpha Waves (8 – 12 Hz)

With a frequency range from 8hz – 12hz, Alpha is emitted when we are in a state of physical and mental relaxation (awake, but not processing much information). Studies show that Alpha states significantly increase beta-endorphin, norepinephrine and dopamine.

These naturally occurring chemicals are linked to feelings of expanded mental clarity and generate an internal environment for new learning and accessing previously learned information.

This state will naturally happen when using Quantum Resonance Binaural Beats as we encode some of these frequencies in addition to the rebalance that occurs in the brain.

Too much Alpha Waves result to Daydreaming, inability to focus, too relaxed

Too little Alpha Waves result to Anxiety, High Stress, Insomnia, OCD

Optimal Alpha Waves result to Relaxation, reduces chronic pain, Increased cerebral blood flow, Increased motivation, energy, and happiness.

Alpha Waves can be increased through Quantum Resonance music, meditation, Alcohol, Marijuana, relaxants, some antidepressants

Theta Waves (4 – 8 Hz)

Theta Brain Waves occur most often in sleep but are also dominant during deep meditation. In theta, we are in a dream, vivid imagery, intuition, and information beyond normal consciousness awareness. It helps us improve our intuition, creativity, and makes us feel more natural.

Too many Theta Waves result to ADHD, depression, hyperactivity, impulsivity, inattentiveness

Too few Theta Waves result to Anxiety, poor emotional awareness, stress

Optimal Theta Waves result to Creativity, emotional connection, intuition, relaxation, Sleep onset and more restful sleep, release beneficial hormones related to health and longevity, Reduce mental fatigue, Reduction of anxiety and stress

Theta Waves can be increased through Quantum Resonance music, meditation

Delta Waves (.5 – 4 Hz)

Delta Brain Waves are one of the slowest but loudest brainwaves (low frequency). It is experienced in a deep, dreamless sleep and in very deep, transcendental meditation. These are also found most often in infants as well as young children. Deep sleep is important for the healing process – as it's linked with deep healing and regeneration. The delta state releases anti-aging hormones, including melatonin and DHEA.

Human growth hormone (HGH) is another anti-aging hormone that is increased when delta brainwaves are occurring inside the brain, due to the stimulation of the pituitary gland. HGH maintains the skin, bone density, cartilage, joints and can also help heal physical pain

Too many Delta Waves result to Brain injuries, learning problems, inability to think, severe ADHD

Too little Delta Waves result to Inability to rejuvenate the body, inability to revitalize the brain, poor sleep

Optimal Delta Waves result to Immune System, natural healing, restorative sleep / deep sleep

Delta Waves can be increased through Quantum Resonance music, meditation, sleep

Lambda/ Hyper Gamma (100-200 Hz)

Lambda waves oscillate at a frequency of 100-200 Hz. Lambda waves are associated with experienced meditators, such as the Tibetan monks, who are able to meditate in the Himalayan mountains for hours without succumbing to the very low temperatures.

Quantum Resonance brings focus to a frequency of 111 Hz in not only the music but in the frequency generator (PEMF). We believe the 111 Hz is a great frequency to apply a strong foundation for the rejuvenation of the mind and body to take place.

Other frequencies

The solfeggio tones are frequencies based around the 432Hz tuning unlike the modern 440 Hz scale. These have a more resonant tone with the Schumann frequency (Earth's frequency) Most Solfeggio tones are used in tuning forks or pure tones. These frequencies are found in many of the Quantum Resonance music.

UT – 396 Hz – Liberating Guilt and Fear.

RE – 417 Hz – Undoing Situations and Facilitating Change.

MI – 528 Hz – Transformation and Miracles (DNA Repair)

FA – 639 Hz – Connecting/Relationships.

SOL – 741 Hz – Awakening Intuition.

LA – 852 Hz – Returning to Spiritual Order.

Quantum Resonance Music

Drawing on the foundations of brain research, Quantum Resonance has created a multitude of music tracks designed to help balance the brain, increase connectivity and bring a greater sense of clarity. We use specially designed music that draw upon Delta, Epsilon, Gamma and other vital frequencies in specific formulations that allows for excellent results.