

5 Brain Wave Frequencies To Understand

Before I get into specifics, it is important to realize that when I refer to a certain brain wave, I am implying that a particular brain wave is “dominant.” Throughout the day in your waking state, your **EEG will display all 5 types of brain waves at the same time.**

However, one particular brain wave will be dominant depending on the state of consciousness that you are in.

Delta	Theta	Alpha	Beta	Gamma
0 - 4 Hz	4 - 8 Hz	8 - 12 Hz	12 - 40 Hz	40 - 100 Hz

For example, if you are awake, but have really bad ADHD, you may have more slow wave (alpha and/or theta) activity than beta waves. During sleep usually there are combinations of the slower frequencies, but even gamma has been found to be involved in rapid-eye movement (REM).

Gamma Waves

These are involved in higher processing tasks as well as cognitive functioning. Gamma waves are important for learning, memory and information processing. It is thought that the 40 Hz gamma wave is important for the binding of our senses in regards to perception and are involved in learning new material. It has been found that individuals who are mentally challenged and have learning disabilities tend to have lower gamma activity than average.

- Frequency range: 40 Hz to 100 Hz (Highest)
 - Too much: Anxiety, high arousal, stress
 - Too little: ADHD, depression, learning disabilities
 - Optimal: Binding senses, cognition, information processing, learning, perception, REM sleep
- Increase gamma waves: Meditation

Beta Waves

These are known as high frequency low amplitude brain waves that are commonly observed while we are awake. They are involved in conscious thought, logical thinking, and tend to have a stimulating affect. Having the right amount of beta waves allows us to focus and complete school or work-based tasks easily. Having too much beta may lead to us experiencing excessive stress and/or anxiety. The higher beta frequencies are associated with high levels of arousal. When you drink caffeine or have another stimulant, your beta activity will naturally increase. Think of these as being very fast brain waves that most people exhibit throughout the day in order to complete conscious tasks such as: critical thinking, writing, reading, and socialization.

- Frequency range: 12 Hz to 40 Hz (High)
 - Too much: Adrenaline, anxiety, high arousal, inability to relax, stress
 - Too little: ADHD, daydreaming, depression, poor cognition
 - Optimal: Conscious focus, memory, problem solving
- Increase beta waves: Coffee, energy drinks, various stimulants

Your natural, waking rhythm. Perception of all 5 senses and of time and space.

Alpha Waves

This frequency range bridges the gap between our conscious thinking and subconscious mind. In other words, alpha is the frequency range between beta and theta. It helps us calm down when necessary and promotes feelings of deep relaxation. If we become stressed, a phenomenon called “alpha blocking” may occur which involves excessive beta activity and very little alpha. Essentially the beta waves “block” out the production of alpha because we become too aroused.

- Frequency range: 8 Hz to 12 Hz (Moderate)
 - Too much: Daydreaming, inability to focus, too relaxed
 - Too little: Anxiety, high stress, insomnia, OCD
 - Optimal: Relaxation
- Increase alpha waves: Alcohol, marijuana, relaxants, some antidepressants

Experienced during light sleep. Higher intuition. The dream state.

Theta Waves

This particular frequency range is involved in daydreaming and sleep. Theta waves are connected to us experiencing and feeling deep and raw emotions. Too much theta activity may make people prone to bouts of depression and may make them “highly suggestible” based on the fact that they are in a deeply relaxed, semi-hypnotic state. Theta has its benefits of helping improve our intuition, creativity, and makes us feel more natural. It is also involved in restorative sleep. As long as theta isn’t produced in excess during our waking hours, it is a very helpful brain wave range.

- Frequency range: 4 Hz to 8 Hz (Slow)
 - Too much: ADHD, depression, hyperactivity, impulsivity, inattentiveness
 - Too little: Anxiety, poor emotional awareness, stress
 - Optimal: Creativity, emotional connection, intuition, relaxation
- Increase theta waves: Depressants

The level associated with deep sleep and relaxation. The mind remains active.

Delta Waves

These are the slowest recorded brain waves in human beings. They are found most often in infants as well as young children. As we age, we tend to produce less delta even during deep sleep. They are associated with the deepest levels of relaxation and restorative, healing sleep. They have also been found to be involved in unconscious bodily functions such as regulating heart beat and digestion. Adequate production of delta waves helps us feel completely rejuvenated after we wake up from a good night’s sleep. If there is abnormal delta activity, an individual may experience learning disabilities or have difficulties maintaining conscious awareness (such as in cases of brain injuries).

- Frequency range: 0 Hz to 4 Hz (Slowest)
 - Too much: Brain injuries, learning problems, inability to think, severe ADHD
 - Too little: Inability to rejuvenate body, inability to revitalize the brain, poor sleep
 - Optimal: Immune system, natural healing, restorative / deep sleep
- Increase delta waves: Depressants, sleep

Deep dreamless sleep also known as slow-wave sleep. Complete loss of body awareness.

Beta Brainwaves 13-40 Hz

Associated with worry, **stress**, paranoia, fear, **irritability**, moodiness, **anger**. Connected to **weakened health** and immune system. Fully awake and alert. **Nervousness, depression**, and **anxiety**. People spend most of their time in the beta state.

Alpha Brainwaves 7-13 Hz

Meditation and relaxation **begins**. Effortless creativity flows. Powerful state for **memory** and **super-learning**. A harmonious, **peaceful state**. Habits, fears, and phobias begin to melt away. **Tranquility and calm**

Theta Brainwaves 4-7 Hz

Insight, intuition, **inspiration**. Answers to important questions can be found. **Feels like** you are **floating**. A **wonderful realm** to explore. Dream like imagery. Good for **problem solving**. Feel **more connected** to others.

Delta Brainwaves 0-4 Hz

Renewal, healing, rejuvenation. Deep, dreamless sleep. **Very rewarding**. Said to be the entrance to **non-physical states of reality**. Best state for **immune system function**, restoration, and **health**.



