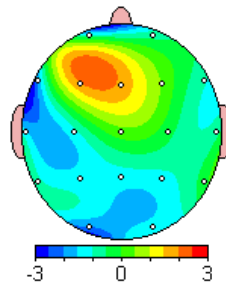


## Neurofeedback Treatment of Depression

Neuroscientists have now discovered a brain pattern that allows us to identify individuals with a biological predisposition for developing depression. This biological marker appears to be very robust, having been replicated many times in brain mapping research utilizing quantitative EEG (QEEG) and neuroimaging.

The left frontal area of the brain is associated with positive emotions and “approach motivation,” which is a desire to be involved with other people. The right frontal area of the brain is associated with depression and fear, accompanied by motivation to withdraw from and avoid other people. When there is more slow brainwave activity in the left frontal area, this part of the brain is more inactive and the right frontal area is more dominant. Such a person is predisposed to be more easily become depressed, withdrawn, and anxious. This may occur because of heredity or because someone had a mild head injury in the left frontal area. The brain map below is of a person with a long history of depression, illustrating the excessive slow brainwave activity in the left frontal area. If you would like an additional alternative to relying on medication alone for treatment, the exciting news is that we now have the technology to retrain the brain. It provides a safe alternative to medication for modifying how the brain functions and is virtually free of side effects.



Neurofeedback has been shown with objective measures to improve. For example, a blinded, placebo-controlled study (Choi, Chi, Chung, Kim, Ahn, & Kim, 2011) demonstrated the superiority of neurofeedback over a placebo treatment in reducing depression, while simultaneously improving executive function.

Although medication can sometimes be helpful with depression, hard research has actually documented that antidepressants only produce an 18% effect over and above placebo effects, and this 18% effect has only been found to occur in serious depression, not moderate and mild depression. Antidepressants also have an addictive component and patients must be carefully tapered off antidepressant medication. Neurofeedback is a more naturalistic treatment that helps condition a healthier brainwave pattern.