



## Studies Show Raising Neureka! Increases Happiness

Research shows when we feel good feelings such as happiness and love, the brain produces brainwaves around 40 cycles per second, which the Peak BrainHappiness Trainer [PBHT] processes to show Neureka! levels on the PC screen. People can learn to increase the amount of the Neureka! they feel. When they do, they feel more positive feelings, like happy, loving and grateful. ***Follow-up testing after just five hours of training showed happiness levels were just as high after 4 months.***

### Study 1: What Does Neureka! Feel Like?

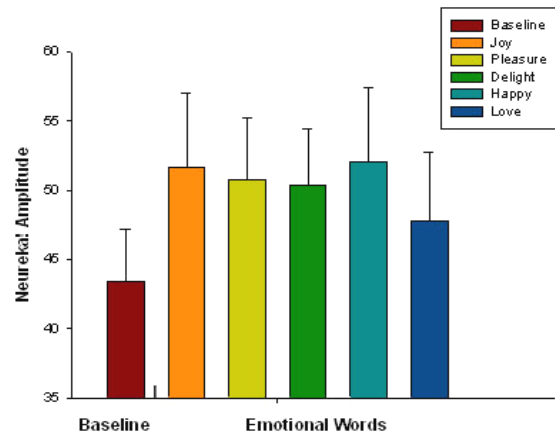
Subjects raised their level of Neureka! using neurofeedback with the [PBHT] for 15 minutes. All but one used very positive words to describe what it felt like to be at higher Neureka! such as: joy, compassion and love. Subjects then created certain positive or negative feelings or ideas inside themselves and watched the screen. Then they rated how the levels of Neureka! they saw compared to what they felt. ***They reported remarkably strong relationships to happiness, love, gratitude, satisfaction, awareness and other experiences.***

**Three Seconds to Happiness.** Then each subject raised their Neureka! levels as high as they could in 3 seconds, using PBHT. Using the words they had used describing their feelings in the first part of the experiment, the subjects raised their levels of Neureka! in a 3 second trial. Experienced meditators raised it, on average, by 28% over the baseline.

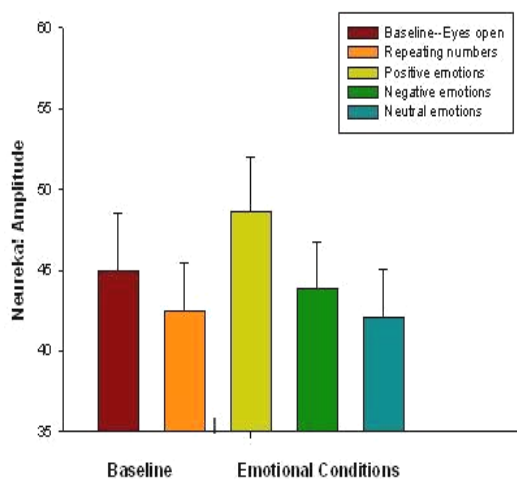
### Study 2: Create the Feelings

Subjects were asked to feel the emotions of certain words for just 6 seconds. The PBHT was used to measure and record the levels of Neureka!. With all of the positive words, the test subjects showed a significant increase above the baseline levels in their Neureka! output. The highest increases in Neureka! values were for the words “happy” and “joy”. The brain produced more Neureka! when the subject felt positive emotions. Studies 2-4 were performed by Dr. Tato Sokhadze at the University of Louisville Dept. of Psychiatry.

MEANS AND STANDARD ERRORS OF NEUREKA! DURING EMOTIONAL WORDS (N=15)



MEANS AND STANDARD ERRORS OF NEUREKA! DURING EMOTIONAL CONDITIONS (N=9)



### Study 3: Positive vs. Negative Feelings

Subjects created internal states related to the positive, negative or neutral words read to them. The Neureka! associated with positive emotions was significantly higher than the Neureka! during negative or neutral emotions. The pair where subjects tested “unhappy” after testing “happy” showed the greatest difference in Neureka!. These studies show that the levels of Neureka! relate to positive feelings.

[ For more information, see: [http://www.peakachievement.com/Happiness/peak\\_brainhappiness\\_study\\_general.html](http://www.peakachievement.com/Happiness/peak_brainhappiness_study_general.html) ]

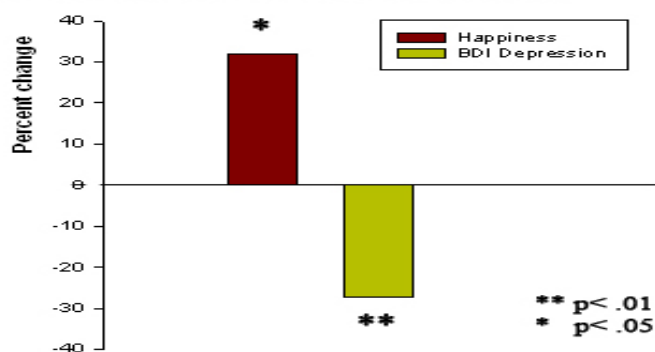
## Study 4: Enhancing Happiness, Thinking, and Memory

Subjects in the 4<sup>th</sup> study had positive results in 3 main areas in just 5 hours of training--25 minutes for each session. They reported being happier, they showed better brain function, and they felt less depressed. Dr. Estate Sokhadze carried out this study at the University of Louisville. In the first part, subjects watched DVD's with beautiful scenes in their sessions. When the subjects raised their Neureka! values, the size of the DVD picture on the PC screen grew at the same time. All of the subjects learned to raise their Neureka!.

**Growing Happiness.** The study used a list of questions to rate their happiness, which was used in an earlier study done in Australia, called HILDA [Household Income and Labour Dynamics in Australia survey]. In that study, they asked the subjects, to rate how happy they were from 1 to 6 - (6) all of the time, (5) most of the time, (4) a good bit of the time, (3) some of the time, (2) a little of the time, and (1) none of the time.

In our study, not counting the subjects who really couldn't report improvement, because they already said they were mostly happy, rating themselves at (5), the other subjects in the lower happiness ranges rated their happiness 50% higher as a group after Neureka! training with the Peak BrainHappiness Trainer. ***These improvements in happiness were just as pronounced after four months at follow up.***

Happiness self-report and BDI depression scores after 12 sessions of Neureka! neurofeedback



### Less Depressed?

The study included another test called the Beck Depression Inventory, a very well known and accepted measure of depressed mood and related symptoms. After training, the subjects improved (lowered) their scores by an average of 27%. However, most of this improvement did not hold up at the four month follow up. [This study is not about the serious condition called clinical depression, which has to be diagnosed by a professional.]

**Better Brain Function.** When the subjects had finished all the training sessions, the researchers rechecked them with a short computerized test called the MicroCog. The MicroCog was developed at Harvard to look for difficulties in thinking and general brain function. The results seem to show the subjects improved in two main areas: General Cognitive Functioning and Memory. This indicates a very selective improvement in brain function, particularly centered around memory accuracy. Some subjects also speeded up their reaction time.

**Happiness and Health.** The Australian study on happiness, "HILDA" [Household Income and Labour Dynamics in Australia survey], showed an interesting relationship between happiness and health. In 2001 they asked the subjects to rate how happy they were. Three years later, in 2004, as part of an extensive health questionnaire, the researchers asked the same subjects to rate their health. The people who rated themselves in the upper ranges of happiness in 2001 were much healthier in 2004. Those happier ones had more than 50% odds to be in better overall health in 2004 than those who had reported they were less happy in 2001.

The results of Dr. Sokhadze's study at the University of Louisville may also indicate that Neureka! training with the Peak BrainHappiness Trainer can improve long-term health. We used the same question about happiness that they did, and showed major improvements. Health and happiness seem to be connected. A recent paper by Diener and Chan reviewed 157 studies showing a clear connection between happiness and future health. ***This may mean that people who become happier may also become healthier and decrease their health-care costs.***

Overall, this study showed people can learn to raise their Neureka! level using neurofeedback with the Peak BrainHappiness Trainer. When they do, they report they are happier, and tests show their brains work better and they may be less depressed.

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