

Molecule of Love

Same Compound Found in Chocolate, Phenylethylamine Demonstrates Positive Effects on Mood, Depression, ADHD, Runners' High, and Love & Monogamy

E3Live BrainON is Super Charged with the "Love Molecule".

E3Live BrainON is a concentrated, certified organic, aqua-botanical known as AFA (*Aphanizomenon flos-aquae*). E3Live BrainON is a naturally occurring food that is innately "supercharged" with phenylethylamine (PEA), also known as "The Love Molecule." This same compound is found in chocolate and thought to produce chocolate's pleasurable effects on mood. E3Live BrainON contains approximately 50 times more PEA than chocolate. Numerous studies exist demonstrating PEA's efficacy as an anti-depressant, and its effectiveness for ADD (Attention Deficit Disorder), as well as being involved with "runner's high" and even the chemicals responsible for romantic love.!

What Is the Love Molecule?

At a science-based level, PEA or phenylethylamine is an alkaloid and a monoamine. In the human brain, it is believed to function as a neuromodulator or neurotransmitter. A colorless liquid that forms a solid carbonate salt with carbon dioxide (CO₂) upon exposure to air, phenylethylamine in nature is synthesized from the amino acid phenylalanine by enzymatic decarboxylation. It is also found in many foods, especially in chocolate. It has been suggested that phenylethylamine from chocolate and especially in E3Live Brain can have psychoactive effects. Subjects easily notice that their mood becomes balanced and their attention and focus are increased. It helps people to enjoyably function at a higher level.

PEA or the Love Molecule as found in E3Live BrainON products is not an isolated compound. It is not at all a synthetic product made in a lab. It is important to know that the "Love Molecule" or PEA is part of the food itself and naturally occurs in combination with numerous co-factors and micronutrients.

The Love Molecule as an Anti-Depressant

Researchers at Rush University and the Center for Creative Development in Chicago conducted a study demonstrating PEA's anti-depressant effects: "Phenylethylamine (PEA), an endogenous neuroamine, increases attention and activity in animals and has been shown to relieve depression in 60% of depressed patients. It has been proposed that PEA deficit may be the cause of a common form of depressive illness. Fourteen patients with major depressive episodes that responded to PEA treatment (10-60 mg orally per day) were reexamined 20 to 50 weeks later. The antidepressant response had been maintained in 12 patients. Effective dosage did not change with time. There were no apparent side effects. PEA produces sustained relief of depression in a significant number of patients, including some unresponsive to the standard treatments. 1

1) Sabelli H; Fink P; Fawcett J; Tom C. Sustained antidepressant effect of PEA replacement. *J Neuropsychiatry Clin Neurosci*, 1996 Spr, 8:2, 168-71.

In the book *Natural Remedies for Depression* by Donald Brown, N.D., Alan R. Gaby, M.D., and Ronald Reichert, N.D., the L form of phenylalanine is discussed:

"L-Phenylalanine, the naturally occurring form of phenylalanine, is converted in the body to L-tyrosine. D-phenylalanine, which does not normally occur in the body or in food, is metabolized to phenylethylamine (PEA), a compound that occurs normally in the human brain and has been shown to have mood-elevating effects. Decreased urinary levels of PEA (suggesting a deficiency) have been found in some depressed patients.⁷ Although PEA can be synthesized from L-phenylalanine, a large proportion of this amino acid is preferentially converted to L-tyrosine. D-phenylalanine is therefore the preferred substrate for increasing the synthesis of PEA—although L-phenylalanine would also have a mild antidepressant effect because of its conversion to L-tyrosine and its partial conversion to PEA. Because D-phenylalanine is not widely available, the mixture D,L-phenylalanine is often used when an antidepressant effect is desired."

Interestingly, anecdotal reports indicate that PEA also appears to work for grief, a somewhat different form of depression. However, no studies have been formally conducted.

The Chemicals of Love

Phenylethylamine has been identified as one of the chemicals involved with love and monogamy. In a 2002 CNN report, *Happily ever after? It's all in your head*, Elina Fuhrmann reports that some scientists and psychologists say that love may be dependant on a cocktail of brain chemicals which may be associated with the success or failure of love relationships. These chemicals, dopamine, norepinephrine and phenylethylamine act on the limbic system, which is the emotional center of the brain and may be responsible for the feelings of euphoria and ecstasy experienced

during new love. Scientists propose that these chemicals wear off after a few months to a few years and may explain why people fall out of love, or take couples to the place where real love begins. Neurobiologists at Emory University in Atlanta, Georgia conducted an animal study injecting voles with oxytocin (the brain chemical involved with bonding and long-term attachment) and vasopressin, deemed "the monogamy gene." By injecting the voles with these two chemicals, the scientists were able to cause the voles to bond and mate for life. But the question remains, which comes first, the love or the chemicals? Is there a love and monogamy pill in our future? If so, it very well may include significant amounts of PEA.

1) Link: <http://archives.cnn.com/2002/HEALTH/02/14/love.chemistry/index.html>

Same Compound in Chocolate

Phenylethylamine is the same compound found in chocolate, that is believed to produce chocolate's positive effects on mood. The phenylethylamine in chocolate is believed to work by making the brain release b-endorphin, an opioid peptide which is the driving force behind its pleasurable effects.¹

"Runner's High" Explained: Exercise Found to Raise PEA Levels

From the book review *Is 'Runners' High' a Cure for Depression?* by Daniel DeNoon, reviewed By Charlotte Grayson. (www.webmd.com - Sept. 27, 2001).

"...phenylethylamine, or PEA, is a natural stimulant produced by the body. ___A British research team reports early findings suggesting that moderate exercise increases PEA levels for most people. They argue that this increase causes the euphoric mood often called "runners' high." And because depressed people tend to have low PEA levels, the researchers say there now is an explanation of why exercise has a natural antidepressant action.

"We are not advocating PEA as a drug," study author E. Ellen Billett, Ph.D., tells WebMD. "What we are trying to say is now there is more chemical evidence for why runners' high occurs. We hope this information might give doctors more confidence in prescribing exercise for mild depression and as an adjunct to drug therapy."

The Nottingham Trent University research team studied 20 healthy young men. The men had their PEA levels measured after one day of no exercise and after one day of moderate exercise (30 minutes on a treadmill at 70% of their maximum heart rate).

All but two of the men had increased PEA levels 24 hours after their exercise. The amount of PEA increase varied from person to person. Interestingly, only three of the men rated the exercise as "hard," and two of these men had the greatest increase in PEA.

Hector Sabelli, MD, PhD, studied PEA while a professor at Chicago's Rush University. Now director of the Chicago Center for Creative Development, Sabelli says that the new findings fit exactly with all of his own experiments.

"What we have seen is that PEA metabolism is reduced in people who are depressed," Sabelli tells WebMD. "If you give PEA to people with depression, about 60% show an immediate recovery -- very fast, a matter of half an hour."

So what about the natural substances called endorphins, which have previously been linked to runners' high? Billett says that endorphins don't penetrate the brain as easily as PEA does -- so she thinks PEA may be the true basis for the good mood one gets from a workout. Sabelli is not so quick to rule out endorphins, however, and says that the natural compounds probably interact in various ways.

"We think PEA is part of the reward of exercise," Billett says, adding that it might be affecting other brain chemicals and that it's likely there are normal differences between individuals. "Some will respond to exercise, some won't."

The "Love Molecule" (PEA) is Safe.

Research Abstract from the Centre for Molecular Design in Beerse, Belgium:

"...Despite its short half-life, phenylethylamine attracts attention since it can potentiate catecholaminergic neurotransmission and induce striatal hyperreactivity. Subnormal phenylethylamine levels have been linked to disorders such as attention deficit and depression; the use of selegiline (Deprenyl) in **Parkinson's disease may conceivably favor recovery from deficient dopaminergic neurotransmission by a monoamine oxidase-B inhibitory action that increases central phenylethylamine.** . The importance of phenylethylamine in mental disorders is far from fully elucidated but the evolution of phenylethylamine concentrations in relation to symptoms remains a worthwhile investigation for individual psychotic patients.

PEA Replacement

In a 1996 study, the effects of phenylethylamine (PEA) replacement were studied. It was found that PEA, an endogenous neuroamine, increased attention and activity in animals and has been shown to relieve depression in 60% of depressed patients. It has been proposed that PEA deficit may be the cause of a common form of depressive illness. Fourteen patients with major depressive episodes that responded to PEA treatment (10-60 mg orally per day, with 10 mg/day selegiline to prevent rapid PEA destruction) were reexamined 20 to 50 weeks later. The antidepressant response had been maintained in 12 patients. Effective dosage did not change with

time. There were no apparent side effects. PEA produces sustained relief of depression in a significant number of patients, including some unresponsive to the standard treatments. PEA improves mood rapidly but does not produce tolerance.

ADHD & PEA

Human Studies

In a number of controlled studies, by measuring urinary excretion levels, PEA was found to be significantly lower in children with ADHD and LD (learning disability). A decreased level of PEA is considered to potentially play an important role for the pathogenesis of LD and ADHD.² Beta-phenylethylamine (b-PEA), a biogenic trace amine, acts as a neuromodulator in the nigrostriatal dopaminergic pathway and stimulates the release of dopamine.³

Animal Studies

In a number of animal studies, neurotransmitters were shown to be depressed. Trace amines (TAs) are present in the central nervous system in which they up-regulate catecholamine release and are implicated in the pathogenesis of addiction, attention-deficit/hyper-activity disorder, Parkinson's disease, and schizophrenia.

Enjoyably Function at a Higher Level

At a less technical and more practical level, PEA or the Love Molecule as innately occurring in E3Live BrainON, uniquely promotes and enhances focus and attention and evenly balances mood as a one hundred percent food-based anti-depressant. Gabriel Cousens, MD, Founder of the Tree of Life Rejuvenation Center, recommends E3Live BrainON to patients suffering from depression over and above pharmaceuticals for the preceding reasons plus for the smooth energy boost experienced by subjects.

Dr. Cousens states: "E3Live BrainON is specific for our nervous system, brain function and the quality of our consciousness. PEA ("the Love Molecule") is specific food for drug addiction, alcoholism, increased hyperactivity, increased attention deficit disorders, and depression. More than any other food, it enables us to make a paradigm shift and enjoy a sense of well-being. There's a quality of joy that's really subtle that many people experience with E3Live BrainON"

I've had people who've been depressed for years and years, and literally, within a few days after receiving E3Live BrainON, their depression lifts. This is because AFA gets to the root of helping heal the addictive brain chemistry, which is behind a lot of

depression. I discuss this at length in my new book, Depression Free For Life. People do not have a Prozac® deficiency. That approach doesn't get to the root of the problem. My depression healing rate using natural foods, including AFA, nutritional supplements and basic lifestyle changes, without the necessity of using any pharmaceutical drugs, Prozac® or anything like that, is over 90%. No drug can compete with that, period.”

E3Live BrainON is the most nutrient-dense food known to humankind. In this sense, it is peerless product. It is a wild-grown, raw, organic and naturally occurring food, not a synthetic product. Dr. Brian Clement, Director of the Hippocrates Institute, simply states that this is “the most nutritious food on the planet.” The “Love Molecule”, as found in E3Live BrainON, is documented in scientific research and well-founded in biochemical and medical literature.