



GABA

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GABA or gamma-aminobutyric acid is an amino acid made in brain cells from glutamate. It functions as an inhibitory neurotransmitter, meaning that it blocks nerve impulses. Without GABA, nerve cells fire too often and too easily. GABA is especially abundant in the cerebral cortex, where thinking occurs and sensations are interpreted. As one of the primary neurotransmitters, GABA is responsible for inhibitory processes. It elevates the production of alpha waves associated with feeling relaxed (without drowsiness) while boosting mental alertness. Moreover, GABA lowers beta waves that contribute to a state of nervousness, racing thoughts and hyperactivity.



GABA has a calming, rhythmic affect on the electrical impulses in the brain. While a balanced brain receives regular, smooth electrical impulses, a GABA deficient one receives impulses in spurts. As a result, the brain experiences arrhythmia, or dysrhythmia which directly affects overall emotional well being.

In our fast-paced world a GABA deficiency is quite common. Environmental toxins, stress and other factors can deplete levels. The caffeine in coffee for instance, inhibits GABA release. The less GABA, the more nerve transmissions occur. The sensation of drinking too much coffee is a direct affect of having high glutamate production without enough GABA.

GABA was discovered in 1950 and is the most important and widespread inhibitory neurotransmitter in the brain. Excitation in the brain must be balanced with inhibition. Too much excitation can lead to restlessness, irritability, insomnia, and even seizures. GABA is able to induce relaxation, analgesia, and sleep. Barbiturates and benzodiazepines are known to stimulate GABA receptors, and hence induce relaxation. Several neurological disorders, such as epilepsy, sleep disorders and Parkinson's disease are affected by this neurotransmitter. This neurotransmitter is made in the brain from the amino acid glutamate with the aid of vitamin B6.



The effect of orally administered GABA on relaxation and immunity during stress has been investigated in humans. The findings denote that it not only induces relaxation but also reduces anxiety. GABA worked effectively as a natural relaxant and its effects could be seen within 1 hour of its administration.

Anxiety disorders are medical conditions that affect approximately 40 million Americans ages 18 or older, according to National Institute of Mental Health. Unlike the mild, short-term anxiety that is caused by a stressful event, anxiety disorders affect a person long term, and it may become progressively worse if left

disorders affect a person long term, and it may become progressively worse if left untreated. Anxiety disorders include diseases such as panic disorder, generalized anxiety disorder, obsessive-compulsive disorders and phobias. GABA is a natural supplement that may benefit individuals suffering from anxiety. Some alternative healthcare practitioners recommend GABA supplements for anxiety disorders. According to Dr. James Balch, MD who is co-author of "Prescription for Drug Alternatives," supplementation with GABA for mild to moderate forms of anxiety is recommended due to its calming and mild sedative effects.

Anxiety is nearly an epidemic as thousands of people feel chronically anxious, irritable and unfocused on a daily basis. And for some people, chronic anxiety seriously interferes with their ability to function in social or workplace settings. Low levels of GABA, may be a contributing factor because GABA deficiencies can negatively affect an individual's ability to manage even the most low level stressful situations.

A calming or "peacemaker" chemical in the brain, GABA induces relaxation, reduces stress and anxiety, and increases focus. One of the four key neurotransmitters, GABA also serves to keep all the other neurotransmitters in check. A deficiency can lead to:

- Anxiety symptoms
- Irritability
- Headaches
- Hypertension
- Palpitations
- Seizures
- Lower sex drive
- Disorders of the heart
- Depression

GABA receptors in the amygdala, a region of the brain that controls emotional reactions were found to have an effect on anxiety and depression, according to a study conducted at the University of Calabria, Cosenza, Italy. In the study, published in the November 2010 "Behavioural Brain Research," activation of these areas of the amygdala with GABA-stimulating substances reduced anxiety in laboratory animals. The researchers predict this GABA-dependant area of the brain will be a useful focus in the treatment of sleep disorders which is often a symptom associated with depression.

GABA has been studied for its effects and potential benefits in the prevention and treatment of depression and other cognitive and emotional disorders. GABA also takes an important role in management of stress in the brain, and even modest deficits can have a pivotal role in behavioral, cognitive and mood disorders, including depression, researchers said of the study, conducted at The Huck Institutes of the Life Sciences, Pennsylvania State University.

Changes in GABA status in later life may contribute to age-associated depression, according to a study conducted at the Institute for Ageing and Health, Newcastle University, Newcastle upon Tyne, United Kingdom. The study, published in the November 2010 "International Psychogeriatrics," found reduced size of GABA-related areas in the prefrontal cortex (the seat of cognitive thought processes) of elderly depressed patients compared to non-depressed individuals of similar age.

GABA also improves quality of sleep by promoting alpha waves in the brain, which normally occur in a state of relaxation and decreases beta waves that predominate in stressful, hyperactive state. Conventional drugs used for anxiety and sleep problems such as Valium or Xanax work by stimulating GABA receptors in the brain, thus having the same action as GABA supplement.

GABA controls the brain's rhythmic theta waves, the normal brainwave in the encephalogram of a person who is awake but relaxed and drowsy. Theta waves help the brain maintain physical and mental balance. This key brain chemical is critically important to maintaining an overall sense of mental well being. GABA is also involved in the production of endorphins, brain chemicals that create a feeling of well being known as 'runners high.'" writes Dr. Braverman. "Endorphins are produced in the brain during physical movement, such as stretching or even sexual intercourse." As endorphins are released people begin to feel a sense of calm, often referred to as the Endorphin Effect.

Drug Interactions

GABA supplement may interact with other drugs that stimulate GABA receptors in the brain, such as benzodiazepines and some muscle relaxants.

GABA supplements do not replace conventional treatment for anxiety. Since GABA may interfere with other drugs and herbs, it is recommended to seek professional advice.



Be sure to try NSP's GABA Plus (60 caps).

References:

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