ABUNDANT IN TEA (ESPECIALLY GREEN VARIETIES), L-THEANINE OFFERS HEALTH BENEFITS BEYOND RELAXATION—AND IT'S NOW AVAILABLE IN SUPPLEMENTS

By Jack Challem

The well-known calming effect of green and black tea derives from theanine, an organic compound and amino acid. Theanine is found almost exclusively in the leaves of *Camellia sinensis*, the source of green, black and oolong teas. Amino acids typically form the building blocks of proteins. However, L-theanine is "free" in tea, meaning that it is not bound to protein.

Like most amino acids, theanine is more formally spelled out as L-theanine. (The L indicates a "left-hand" structure of the molecule.) Chemists may refer to theanine as gamma-ethylamino-L-glutamic acid. Theanine is different from the antioxidant epigallocatechin-3-gallate (EGCG) and caffeine, which are also present in green tea. In addition, theanine can be converted to glutamic acid, which functions as a neurotransmitter.
**HOW IT WORKS:** Theanine increases the brain's levels of alpha waves, which promote a combination of relaxation and mental sharpness, similar to the effects of meditation. Theanine functions very much like a neurotransmitter, but it also boosts the brain's levels of gamma-aminobutyric acid (GABA), a calming neurotransmitter. Theanine remains intact through digestion, and its effect on brain waves generally occurs within 30 to 40 minutes. Its benefits may last as long as 12 hours.

**HEALTH BENEFITS:** Supplemental theanine helps with the following:
- **Relaxation.** Studies of people and animals have shown that theanine supplements significantly boost the brain's levels of alpha waves, leading to less anxiety and a relaxed feeling. The benefits of theanine are all the more impressive because it does not cause drowsiness (which is actually related to theta and delta brain waves).
- **Mental sharpness.** Alpha waves are also associated with improved mental acuity, and animal experiments have confirmed that higher alpha waves can improve learning. According to an article by Raymond Cooper, PhD, in the *Journal of Alternative and Complementary Medicine*, creative people produce more alpha waves when trying to solve a problem.
- **Stress protector.** In a controlled study, researchers asked 12 college students to work on stressful 20-minute math problems on four different occasions. During all of the tests, the students' heart rate and immunoglobulin A (an indicator of stress) were elevated, and they showed signs of psychological stress. However, taking 200mg of theanine before or during the tests resulted in significant reduction in stress.
- **Immune enhancer.** Some theanine gets converted to ethylamine, a molecule that stimulates the activity of gamma-delta T immune cells. These immune cells protect the body against bacterial, viral, parasitic and fungal infections. In addition, gamma-delta T cells stimulate the secretion of interferon and have some antitumor activity.
- **Other benefits.** Theanine may lower blood pressure, reduce the
risk of stroke, and protect against liver toxicity, such as from alcohol.

**BACKGROUND CHECK:** Green tea has been consumed for thousands of years in Asia. However, it wasn't until 1949 that researchers identified theanine as a constituent of tea leaves.

**GLEANINGS:** Theanine accounts for 1 to 2 percent of the dry weight of green tea. It is also responsible for the taste of green and black tea—the more theanine, the better the taste. Higher quality (and usually more expensive) tea contains larger concentrations of theanine. The distinctive taste of green tea is known as umami in Japanese.

**HEADS UP:** Because green tea has such a long history of use in Asia, it shouldn't be surprising that one Japanese company, Taiyo, owns more than 65 patents on theanine. The company's Suntheanine brand of theanine has the greatest purity, consistency and reliability in the marketplace. In fact, a recent study found that many commercial theanine supplements contain the inactive D-theanine form. A variety of American supplement companies use Suntheanine, which is pure L-theanine. To be sure, look for a small Suntheanine logo on the supplement and food labels.

**WHAT YOU SHOULD TAKE:** Theanine is exceptionally safe. Human studies have generally achieved benefits with 100–200mg daily, and some formulas also contain GAiiA. You can take theanine with food or between meals.

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**The Doctor’s Favorite for Insomnia**

Jacob Teitelbaum, MD, author of *From Fatigued to Fantastic!, Pain-Free 1-2-3* and other books, has been using L-theanine for years to help his patients improve their sleep quality. "L-theanine is a wonderful herbal remedy that helps insomnia and keeps anxious people calm—while keeping them energized and clear minded," he says.

According to Teitelbaum, who specializes in helping people with chronic fatigue and fibromyalgia, L-theanine stimulates alpha brain waves. There are four types of brain waves, each one responsible for creating a different mental outlook. As Teitelbaum explains it, "Alpha brain waves are associated with an awake yet relaxed, almost meditative, state of mind." Research in *Trends in Food Science Technology* and other journals backs this up.

L-theanine is thought to work for insomnia by boosting the calming neurotransmitter GABA, which is critical for sleep and actually stimulated by many prescription sleep medications, says Teitelbaum, who also recommends the supplement for weight loss. He adds, “Studies show that green tea helps with weight loss and the animal model studies suggest that the theanine in the green tea contributes significantly to this.” For insomnia, Teitelbaum suggests patients take 50-200mg at bedtime for sleep, and it can also be used several times a day for anxiety—without worsening brain fog.

Although used in Japan for years (in drinks, gum, chocolate, candies and ice cream), L-theanine was just recently approved by the FDA for use as a food additive in the United States. Teitelbaum says, “I tease that it’s just a matter of time until the barista at the local coffee shop asks, ‘One pump of L-theanine or two?’” This may be a good thing for a society hooked on triple-espresso lattes: L-theanine has been shown, in at least one study, to partially counteract the excess stimulation caused by caffeine. Let’s drink to that—and to L-theanine’s varied health benefits. —NB

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