



designs for health®

## STRESSARREST™

HELPS TO TEMPORARILY PROMOTE RELAXATION  
90 VEGETARIAN CAPSULES | NPN80049966 | STA090-CN

**StressArrest™** is a synergistic formula of GABA, glycine, and B vitamins designed to support a healthy response to stress. A nutrient-dense diet, proper sleep, and stress management techniques are the foundation for coping well in the face of stress, but when chronic, unrelenting stress increases the body's need for certain nutrients, targeted supplementation may facilitate greater resilience. Moreover, heavy alcohol consumption and smoking—coping mechanisms individuals may turn to during periods of heightened stress—may impair absorption and metabolism of precisely some of the nutrients needed to mount an appropriate response, further deepening the need for repletion.

The synergistic blend of ingredients in StressArrest™ is formulated to support neurotransmitter synthesis, adrenal gland function, cellular energy generation, and a calm mind. The adrenal glands, key players in mounting a healthy response to stress, have a high demand for B vitamins, which are commonly depleted during stress as a result of overtaxing these glands. Thus, it may be beneficial to provide these essential nutrients in supplemental form during periods of acute and chronic stress to facilitate repletion and ensure the body has an adequate supply to draw from.

Additionally, B vitamins may help support healthy blood sugar levels. The irritability or emotional lability some individuals experience during stressful situations may be the result of unrecognized acute hypoglycemia. By providing required enzyme cofactors and calming neurotransmitters, StressArrest™ may help even out the “highs and lows” that may be contributing to difficulty coping with everyday stress.

### HIGHLIGHTS

**Gamma-aminobutyric acid (GABA)** – a naturally occurring amino acid in the brain and a major inhibitory neurotransmitter in the central nervous system. GABA serves as a critical calming agent for the body, helping to combat acute stress. The brain synthesizes GABA from glutamate, an excitatory neurotransmitter. These two neurotransmitters work together in an orchestrated system of checks and balances. Being an inhibitory neurotransmitter, GABA blocks nerve impulses, slowing down the activity of nerve cells and preventing them from over-firing. Frequent over-firing of brain cells can lead to cell death, meaning that stress can actually kill brain cells. Stressful situations may decrease GABA levels, causing this delicate system to become unbalanced. Acute psychological stress was shown to decrease prefrontal brain GABA levels by 18% in healthy adults.<sup>1</sup> Supplementation with GABA may be of benefit in helping individuals cope with both acute and chronic stress.

**Niacin (Vitamin B3)** – a cofactor in cellular energy production. Over 400 enzymes require the coenzymes synthesized from niacin—NAD and NADP—primarily as electron donors and acceptors for redox reactions in metabolism. NAD functions mainly in energy-producing reactions involving the catabolism of carbohydrates, fats, and proteins.<sup>2</sup> Niacin may also have a mild tranquilizing effect, making it potentially beneficial for those with obsessive-compulsive and anxiety disorders.<sup>3</sup> Addi-

tionally, this vitamin is a component of the glucose tolerance factor (along with chromium), which may aid in normal blood sugar regulation, and consequently, a more balanced response to stress.<sup>4</sup>

**Pantothenic Acid (Vitamin B5)** – a water-soluble vitamin and precursor in the biosynthesis of coenzyme A (CoA), an essential coenzyme in a variety of life-sustaining biochemical and metabolic reactions. As acetyl-CoA and succinyl-CoA, CoA is involved in the Krebs cycle and the synthesis of essential fats, cholesterol, and steroid hormones. These roles may be why B5 has long been recognized as supporting proper function of the adrenal glands.<sup>5</sup> Pantothenic acid is widely distributed in the food supply, so overt deficiency in humans is rare. However, animal studies indicate that B5 deficiency may result in low blood glucose, rapid breathing and heart rates, decreased exercise tolerance, and reduced glycogen storage in the liver and muscles.<sup>6</sup> It is possible that subclinical B5 insufficiency, rather than overt deficiency, may result in similar symptoms in humans.

Vitamin B6 – a required cofactor for the aromatic L-amino acid decarboxylase enzyme, which catalyzes the conversion of 5-HTP to serotonin, and L-Dopa to dopamine. The GABA-glutamate cycle also requires B6 for glutamate decarboxylase, the enzyme that converts glutamate to GABA, making this nutrient indispensable for neurotransmitter synthesis and a healthy response to stress.<sup>7</sup> Individuals who experience panic attacks have been shown to have low B6 levels compared to healthy controls.<sup>8</sup> B6 is also needed for gluconeogenesis and glycogenolysis, instrumental processes in maintaining steady blood glucose and energy levels, which may help support maintaining equanimity in stressful situations.<sup>9</sup>

Vitamin B6 insufficiency may interfere with adequate production of EPA and DHA via its role as a cofactor for delta-6-desaturase, the first enzyme in the pathways that elongate omega-3 alpha-linolenic acid and omega-6 linoleic acid into their long-chain metabolites.<sup>10,11</sup> With DHA being a primary constituent of brain phospholipids and neuronal cell membranes, DHA insufficiency could have profound implications for brain health, including mood and ability to cope with stress.

B6 is widely available in foods, but certain metabolic states and commonly prescribed pharmaceutical drugs may interfere with its absorption and/or induce a need for increased intake above that typically obtained through the diet. Oral contraceptives, increased small intestinal permeability (“leaky gut”), and chronic use of NSAIDs may interfere with absorption and metabolism of B6, increasing the need for supplementation.<sup>7,12-14</sup>

Glycine – the smallest amino acid, with a side chain consisting of a single hydrogen atom. Glycine is synthesized from serine in the human body, but endogenous synthesis in healthy adults has been shown to fall short of meeting the many biological and metabolic demands for this amino acid.<sup>15</sup> Individuals experiencing acute or chronic stress may have an even greater demand for glycine, making this a conditionally essential amino acid and increasing the need for supplementation.<sup>16</sup>

Glycine is a well-known inhibitory neurotransmitter: the binding of glycine to its neuronal receptor results in an influx of chloride ions, leading to membrane hyperpolarization and inhibition of the response to excitatory neurotransmitters.<sup>17</sup> Owing to its inhibitory function, glycine may be helpful for improving sleep quality, which, in itself, may be beneficial for supporting healthy responses to psychological stress.

**Medicinal Ingredients (per capsule):**

GABA (gamma-Aminobutyric acid).....	300 mg
Glycine (Aminoacetic acid).....	200 mg
Pantothenic acid (Calcium d-pantothenate) .....	100 mg
Vitamin B3 (Niacinamide) .....	100 mg
Vitamin B6 (Pyridoxine hydrochloride) .....	10 mg

**Non-Medicinal Ingredients:** Hypromellose, microcrystalline cellulose, magnesium stearate (vegetable source). **Recommended Dose:** Adults: Take 1 capsule per day, or as directed by your health care practitioner. Consult a health care practitioner for use beyond 3 weeks.

**REFERENCES**

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