

CatecholaCalm™



Adaptogenic and adrenal tonic herbs to promote a healthy response to stress*

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This information is provided as a medical and scientific educational resource for the use of physicians and other licensed health-care practitioners ("Practitioners"). This information is intended for Practitioners to use as a basis for determining whether to recommend these products to their patients. All recommendations regarding protocols, dosing, prescribing, and/or usage instructions should be tailored to the individual needs of the patient considering their medical history and concomitant therapies. This information is not intended for use by consumers.

Persistent stress is recognized as a primary or exacerbating factor in non-communicable illness. It is increasingly acknowledged that chronic stress can no longer be assessed solely through measurement of cortisol levels. In contrast, research indicates that as ongoing stress leads to a state of adrenocortical exhaustion or "burnout," a compensatory adrenal response may occur in the form of increased sympathetic, catecholamine activity.¹ Because of this increasingly common phenomenon, which is associated with such conditions as post-traumatic stress disorder and classic fibromyalgia,²⁻⁶ it is clinically prudent to employ formulations that not only optimize cortisol balance but correct catecholamine imbalances as well, particularly in cases of sympathetic dominance.

CatecholaCalm™ is specifically designed to address this unique but increasingly prevalent set of adrenal hormone and neurotransmitter imbalances (often referred to as the "wired and tired" individual).^{*} The product accomplishes this by providing adaptogenic, nervine, and adrenal tonic herbs for relaxation along with nutrients designed to help with adaptation to stress and optimization of adrenal gland health.^{*} The specific focus is on both cortisol and catecholamine balance. Elevated catecholamines and especially cortisol can impact serum blood glucose and insulin levels, thereby contributing to the development of cardiometabolic conditions which have reached overwhelming prevalence.^{7,8}

Ingredient Highlights

Ashwagandha (*Withania somnifera*)

This adaptogenic herb has a long history of use as a nerve tonic in Ayurvedic medicine. It has been demonstrated to have a sparing effect on stress-induced cortisol depletion and to promote relaxation.⁹ "Somnifera" in the botanical nomenclature of this herb is derived from the word somnolence, meaning rest and sleep. Thus, ashwagandha is considered a relaxing adaptogen.

Valerian root (*Valeriana officinalis*)

This herb has demonstrated sedative effects due to its ability to induce the release of gamma-aminobutyric acid (GABA) from brain tissue and also to inhibit the degradation of GABA.¹⁰ Valerian and its primary active component, valerenic acid, have been shown to possess anxiolytic and sedative effects also through GABAergic mechanisms. Human trials suggest the use of valerian for occasional anxiety, insomnia and restlessness, which may be beneficial for those whose mental and emotional distress interfere with restful sleep.¹¹⁻¹³ Valerian root has been shown to act on benzodiazepine receptors, potentially benefiting patients who experience trouble sleeping and occasional anxiety.¹³

Passion flower (*Passiflora incarnate*)

Human and animal studies support the use of passion flower for promoting a calm and relaxed state in individuals experiencing occasional anxiety, agitation, and nervousness.^{14,15} Like valerian, this botanical may also be helpful for individuals with occasional insomnia.¹⁶ It has been suggested that apigenin, a constituent of passion flower, binds to central benzodiazepine receptors, possibly imparting relaxing effects without impairing memory or motor skills.¹⁷ In vitro, in vivo, and animal studies suggest that passion flower may exhibit potential anxiolytic properties and help attenuate certain medication dependence via GABAergic mechanisms; however, further research is needed to fully establish its use in occasional anxiety and nervous conditions.^{14,18-20}

Lemon balm (*Melissa officinalis*)

This herb may promote feelings of calmness via the inhibitory action of GABA.²¹ In vitro studies indicate that lemon balm extract substantially inhibits GABA transaminase (GABA-T), the enzyme that degrades GABA, which may be the basis for its calming effects.^{22,23}

L-Theanine has been demonstrated in human studies to significantly reduce cortisol response and subjective stress response to cognitive stressors and to suppress the stimulatory effect of caffeine.^{24,25} Theanine crosses the blood brain barrier and is known to block the binding of glutamic acid to glutamate receptors in the brain "and has been considered to cause anti-stress effects by inhibiting cortical neuron excitation."²⁶ Human studies have shown that healthy adults who were given L-theanine experienced reduced feelings of perceived anxiety and blood pressure increases under conditions of physical or psychological stress.²⁶

Benefits*

- Promotes healthy cortisol & catecholamine metabolism
- Supports neurotransmitter synthesis
- Promotes calm & relaxation without inducing drowsiness
- Supports healthy adrenal function
- Promotes a healthy stress response
- Supports GABA activity for mental calm

Supplement Facts

Serving Size 3 capsules
Servings Per Container 30

Amount Per Serving	% Daily Value	Amount Per Serving	% Daily Value
Vitamin C (as Ascorbic Acid)	100 mg 111%	Lemon Balm Extract (<i>Melissa officinalis</i>)(leaves) [standardized to contain 3% rosmarinic acid]	100 mg *
Thiamin (Vitamin B-1) (as Thiamin HCl)	50 mg 4167%	Passion Flower Extract (<i>Passiflora incarnate</i>)(aerial part) [standardized to contain 3.5% flavonoids]	100 mg *
Riboflavin (Vitamin B-2) (as Riboflavin-5-Phosphate)	10 mg 769%	Valerian Extract (<i>Valeriana officinalis</i>)(root) [standardized to contain 0.8% valerenic acid]	100 mg *
Vitamin B-6 (as Pyridoxal-5-Phosphate)	5 mg 294%	Ashwagandha Extract (<i>Withania somnifera</i>)(root and leaf) [standardized to contain 1.5% withanolides]	100 mg *
Vitamin B-12 (as Methylcobalamin)	2000 mcg 83333%	Phosphatidylserine (from sunflower lecithin)	50 mg
Pantothenic Acid (as d-Calcium Pantothenate)	50 mg 1000%		
Magnesium (as Di-Magnesium Malate)	75 mg 18%		
Taurine	300 mg *		
L-Theanine	200 mg *		

*Daily Value not established.
Other Ingredients: Cellulose (capsule), microcrystalline cellulose, vegetable stearate.

Animal studies suggest that L-theanine may increase brain levels of serotonin, dopamine, and GABA.²⁷ Human EEG studies show “L-theanine significantly increases activity in the alpha frequency band which indicates that it relaxes the mind without inducing drowsiness,”²⁸ making it a valuable tool for relieving feelings of anxiety or stress while not negatively impacting alertness and focus. More research is needed, but mechanistic explanations support a potential supportive role for L-theanine in certain neurodegenerative and psychiatric disorders.²⁹

Phosphatidylserine (PS) has been demonstrated to decrease reactivity of the pituitary-adrenal axis to stress and control cortisol release.^{30,31} Healthy male subjects given PS and phosphatidic acid (a precursor to PS) experienced normalized levels of adrenocorticotrophic hormone (ACTH) and cortisol compared to placebo.³² This result was seen in subjects defined as “chronically high-stressed” but not in those with lower stress levels. This finding confirmed those of an earlier study in which PS (combined with omega-3 fats) was found to favorably affect the stress response in a group of healthy men with high ongoing stress compared to those with lower regular stress levels.³³ It may be that lower-stress individuals have less exaggerated stress responses to begin with and would therefore benefit less from substances that target a lowering of cortisol, but more research is warranted to fully understand this. The PS used in this formula is derived from sunflower lecithin and is soy-free.

Taurine has many proposed roles in brain function, including supporting the regulation of neuronal excitability, learning and memory formation, neuroprotection, and enhancing central nervous system development. It may also play a significant role in cell membrane structure and depolarization-associated calcium channel activity.³⁴

Taurine may also act on glycine receptors as an endogenous neurotransmitter and activate the GABAergic network. GABA is the main inhibitory neurotransmitter, slowing down nerve cell activity and preventing overfiring. GABA levels may decrease during stressful situations, leading to an imbalance in the excitatory/inhibitory system and a higher risk of mental health conditions, including depression and anxiety.³⁵⁻³⁷

Researchers have evaluated whether taurine may support the stress response and mental health. One animal model of anxiety found that an intranasal administration of taurine led to a reduction in anxiety, as demonstrated by fewer horizontal and vertical activities and more time spent in the open area.³⁸ Another study on an animal model of depression induced by chronic unpredictable mild stress found that pretreatment with taurine reduced the effects of stress, including preventing memory defects and anxiety.³⁶ Taurine also ameliorated imbalances in neurotransmitters, including serotonin, dopamine, noradrenaline, glutamate, and corticosterone that are associated with depression and promote normal HPA axis function.³⁶

Magnesium (as di-magnesium malate) has a general calming effect and may help individuals experiencing irritability.* Given that patients who are experiencing elevated catecholamines are often insulin resistant³⁹ and that insulin resistance impairs cellular uptake of magnesium,⁴⁰ it is recommended to use highly absorbable chelated forms of magnesium such as malate or glycinate. Concerning catecholamine metabolism, magnesium has been demonstrated to suppress the release of catecholamines by the heart, which is an indirect index of sympathetic efferent neuronal activity.⁴¹

Thiamine (vitamin B1) is the core component of thiamin pyrophosphate (TPP), a coenzyme required for catabolism of the branched chain amino acids, which are nitrogen sources for the synthesis of GABA and glutamate.⁴² Research indicates that thiamine deficiency causes oxidative and endoplasmic reticulum stress and autophagy associated with various neurodegenerative disorders.⁴³

Vitamin B12 (as methylcobalamin) is a cofactor for and involved in catecholamine degradation as well as synthesis of epinephrine from norepinephrine and also plays a role in myelin synthesis, making it crucial for healthy nervous system function.⁴⁴ B12 deficiency, including subclinical insufficiency, may be associated with agitation, irritability, impaired concentration and focus, and feelings of panic such as those that might occur under prolonged psychological stress.⁴⁵

Vitamin B6 (as pyridoxal-5-phosphate) is a cofactor for the enzyme aromatic L-amino acid decarboxylase, required for the synthesis of serotonin and dopamine. It is also involved in the synthesis of GABA and norepinephrine.⁴⁶

Vitamin C has been found to reduce the oxidation rate of catecholamines and is also required for synthesis of catecholamines and cortisol.⁴⁷ The fatigue associated with vitamin C deficiency has many putative causes, one of which may be decreased synthesis of norepinephrine.⁴⁸

CatecholaCalm™ also includes pantothenic acid (vitamin B5) and riboflavin (vitamin B2, as riboflavin 5-phosphate), which play critical roles as enzyme cofactors in the production of stress hormones.⁴⁸

Recommended Use: Take 3 capsules per day, or as directed by your health-care practitioner.

Suggested lab tests: Designs for Health Metabolomics Spotlight™: Spotlight 3: CNS Neurotransmitters and Hormones

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---catecholacalm-tech-sheet-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage.

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

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