

Adrenal Complex

Glandular Adrenal Support*

designs for health®

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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.

Designs for Health's Adrenal Complex is a glandular-based product designed to support overall adrenal function.* It is formulated with a synergistic blend of vitamins, amino acids, and adrenal glandulars designed to promote a normal response to stress and support hormone balance.*

Adrenal Complex features 200 mg of whole adrenal glandular and 50 mg of adrenal cortex glandular per serving, and it is fortified with clinically useful amounts of N-acetyl-L-tyrosine, para-aminobenzoic acid (PABA), a comprehensive spectrum of B vitamins, and vitamin C to help encourage normal cortisol balance and catecholamine production.* This product may be ideal for individuals who require support for proper cortisol homeostasis and a healthy stress response, hypothalamic-pituitary-adrenal (HPA) axis function, proper catecholamine production and metabolism, adrenal cortical health, and overall nutritional status during times of stress.*

Highlights

- Synergistic combination of vitamins, amino acids, and adrenal glandulars to support optimal adrenal health and function*
- Features freeze-dried glandular materials obtained from certified bovine spongiform encephalopathy (BSE)-free sources to maximize quality and freshness*
- Gluten-free, dairy-free, and soy-free
- Non-GMO

The HPA Axis

The HPA axis is an interdependent, tightly-linked neuroendocrine mechanism that plays a vital role in the body's response to stress, and mood balance, and it helps regulate many physiological processes and glucocorticoid levels.¹ Chronic stress induced by physiological, psychological, and other environmental factors may impair optimal function of the HPA axis.¹ Dysregulation of the HPA axis is associated with a poor stress response, inappropriate production, release, and activity of critical hormones and catecholamines, and a myriad of physiological disturbances.¹⁻³

Prolonged release of glucocorticoids (cortisol, cortisone) and catecholamines (epinephrine, norepinephrine) during times of chronic stress can lead to imbalances in adrenal function and downstream effects to metabolic and neuroendocrine activity, in addition to the depletion of a host of micronutrients.¹ Owing to a chronically hyperactive stress system, sequelae may include psychological, mood, neurological, metabolic, and immune imbalances.^{1,4} Evidence indicates that adrenal hypofunction or insufficiency may occur from a variety of factors, including stress and accumulated environmental exposures.⁵

Adrenal Glandulars

Ingredient Highlights

The inclusion of tissue-specific glandulars from both the adrenal cortex and the whole gland provides a variety of micronutrients to support adrenal health.* In addition to being rich in vitamins and minerals, these adrenal glandulars contain protein-based substances that may support specific messenger activity that help target the body's adrenal tissues for optimal function.* However, more clinical evidence for adrenal glandulars to support adrenal function and recovery is needed.

Tyrosine

The amino acid n-acetyl-L-tyrosine, the most bioavailable form of tyrosine, is a critical building block of catecholamines such as dopamine and norepinephrine.⁶ Conditions related to chronic stress can influence catecholamine levels in the body, which may have deleterious downstream effects including increased oxidative stress and changes to glucose metabolism.⁷

Benefits*

- Promotes optimal adrenal health
- Supports a healthy response to stress
- Promotes normal hormone balance and neurotransmitter production
- Supports optimal hypothalamic-pituitary-adrenal (HPA) axis function

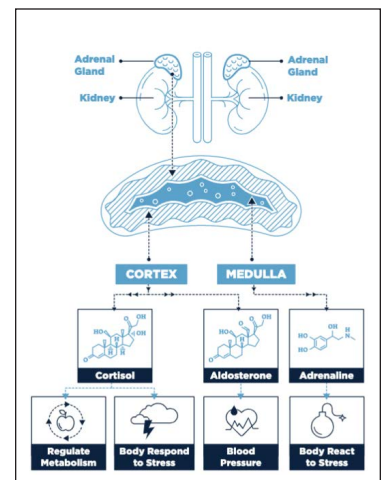
Supplement Facts

Serving Size 2 capsules
Servings Per Container 60

Amount Per Serving		% Daily Value
Vitamin C (as Ascorbic Acid)	100 mg	111%
Thiamin (Vitamin B-1)(as Thiamine HCl)	2 mg	167%
Riboflavin (Vitamin B-2) (as Riboflavin-5-Phosphate)	5 mg	385%
Vitamin B-6 (as Pyridoxal-5-Phosphate)	5 mg	294%
Pantothenic Acid (as D-Calcium Pantothenate)	250 mg	5000%
Whole Adrenal Glandular	200 mg	*
PABA (Para-Aminobenzoic Acid)	50 mg	*
N-Acetyl-L-Tyrosine	50 mg	*
Adrenal Cortex Glandular	50 mg	*

*Daily Value not established.

Other Ingredients: Bovine gelatin (capsule), microcrystalline cellulose, vegetable stearate.



Research indicates that supplementation with tyrosine may help promote levels of dopamine and norepinephrine in the brain.⁶ It may also help attenuate neurotransmitter depletion in actively firing neurons.⁶ Tyrosine may therefore help prevent cognitive changes associated with decreased catecholamine levels and may support brain health in individuals exposed to chronic stress.⁶ A review in 2015 indicated that in cognitively-demanding and/or short-lived stressful moments such as multitasking and sleep deprivation, tyrosine supplementation helped support cognitive function and performance and helped reverse stress-induced catecholamine neurotransmitter depletion.⁶

Vitamin C

Vitamin C is a powerful antioxidant and plays an important role in cortisol levels and helps support the synthesis of neurotransmitters.⁸ In animal and clinical studies, vitamin C supplementation (of 300 mg daily for the clinical studies) was shown to help support a decreased cortisol response following psychological or physical stressors.⁹ Another study indicated that supplementing with vitamin C and other antioxidants may reduce exercise-induced stress by decreasing HSPA1A and HSPB1 mRNA expression in white blood cells.¹⁰

B vitamins

Adrenal Complex features clinically relevant amounts of the B vitamins thiamin (B1), riboflavin (B2), pantothenic acid (B5), and pyridoxal-5-phosphate (P5P), a bioavailable form of vitamin B6. These vitamins are critical cofactors for many essential chemical reactions in the body including energy and hormone production and cellular metabolism.^{8,11} Research also indicates they may also support mood health, a normal response to stress, and the production of certain neurotransmitters including serotonin and dopamine.⁸

Riboflavin (vitamin B2) is critical for mitochondrial function, and is an essential component of two coenzymes that aid in energy production and cellular metabolism, flavin mononucleotide (FMN) and flavin adenine dinucleotide (FAD).¹¹

Pantothenic acid is a component of coenzyme A (coA), which is required for many reactions within the body including steroid hormone synthesis.¹² It is thought to be essential to the structure of adrenal glands.¹² Pantothenic acid may also help adrenal glands generate more cortisol when needed. In a study conducted on male rats, adrenal cells in those given pantothenic acid exhibited higher basal levels of corticosterone than the control rats.¹²

Vitamin B6 is a key nutrient involved in the production of GABA, a compound responsible for the reduction of corticotropin-releasing hormone (CRH), which lowers adrenal output of cortisol.¹⁰ It is an essential cofactor for the production and conversion of serotonin.¹³

A study conducted in 2015 addressed the impact of thiamine (vitamin B1) and exercise on brain-derived neurotrophic factor (BDNF) and acetylcholine (ACh) in the hippocampus of stressed animal models. The researchers found that 30 days of B1 supplementation improved the ability to cope with chronic stress through BDNF and ACh modulation as well as enhancing motor activities and memory function.¹⁴

The synergistic blend of ingredients in Adrenal Complex may help promote proper cortisol homeostasis and a healthy stress response, nurture healthy HPA axis function, promote proper catecholamine production and metabolism, support adrenal cortical health, and support overall nutritional status during times of stress.* Adrenal Complex may also help maintain normal body composition and healthy weight during times of prolonged stress.*

Recommended Use: Take 2 capsules per day with meals or as directed by your health-care practitioner.

Warning: Consult with your health-care practitioner if pregnant, breastfeed, or planning to become pregnant or taking any other prescription medications.

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

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

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare 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.**

To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at www.designsforhealth.com.