



ADRENAL COMPLEX

GLANDULAR ADRENAL SUPPORT
120 CAPSULES | NPN80050214 | ADC120-CN

Adrenal Complex is a glandular-based adrenal product offering comprehensive support for overall adrenal and hypothalamic-pituitary-adrenal (HPA) axis function. The adrenal glands are mainly responsible for secreting cortisol and catecholamines (epinephrine and norepinephrine), the hormones involved in mediating stress responses. In addition to causing the depletion of a host of micronutrients, stress can alter levels of cortisol and catecholamines in a detrimental manner.

CORTISOL

Maintaining ideal levels of cortisol, referred to as the “stress hormone,” is critical to health. The adrenals secrete this hormone during the body’s “fight or flight” response to stress. Small increases of cortisol are often welcomed, such as those quick bursts of energy necessary in crisis situations for survival reasons, or in helping to maintain homeostasis in the body. However, higher than normal levels of cortisol for prolonged amounts of time, as seen with chronic stress, have been shown to have negative effects on the body. For example, cortisol increases serum blood glucose and insulin levels, inducing dysglycemia and laying the foundation for metabolic syndrome.

THE HPA AXIS

The HPA axis is an interdependent, tightly-linked neuroendocrine unit which makes up a major component of the body’s stress-response system. The hypothalamus and pituitary form the central part of the HPA axis, whose main function is to control reactions to stress, maintaining stress-related homeostasis. It is the combined system of neuroendocrine units (the nervous and endocrine systems as they function together) which regulate the adrenal gland’s hormonal activities. Chronic stress induced by physiological, psychological, and other environmental factors may impair optimal function of this interconnected neuroendocrine system. 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.^{1,2}

WHY INCLUDE GLANDULARS?

The inclusion of tissue-specific glandulars from both the adrenal cortex as well as the whole gland provides a variety of micronutrients to support adrenal health. In addition to being rich in an array of vitamins and minerals, these adrenal glandulars contain protein-like substances which may have specific messenger activity that help target the body’s adrenal tissues for optimal function.

With the ever-increasing concerns over the safety of glandular materials, we have gone to extreme lengths to obtain the purest and cleanest sources of glandulars on the market today. Our glandular materials are obtained only from certified BSE-free countries (Argentina) and are freeze-dried to prevent rancidity.

ADDITIONAL KEY INGREDIENTS

The amino acid n-acetyl-l-tyrosine, the most bioavailable form of tyrosine, is included as a critical building block of catecholamines (often depleted under chronic stress conditions). Research shows that supplementing with tyrosine may be useful for individuals exposed to chronic stress. For example, a review in 2015 provides evidence that in cognitively-demanding and/or short-lived stressful moments such as multitasking and sleep deprivation, tyrosine supplementation can effectively improve cognitive function and performance and reverse stress-induced catecholamine neurotransmitter depletion.⁴

The inclusion of vitamin C is critical since it also plays an important role in cortisol levels. One particular study looked at the "adrenal-vitamin C axis" in certain mammalian species who do not synthesize vitamin C and found there is a strong inverse correlation between cortisol levels and vitamin C. Results revealed that after a physical or psychological stressor, supplementing with vitamin C was associated with a decreased cortisol response.⁴ 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.⁵

Also included in Adrenal Complex is the B vitamin family — thiamine HCl (B1), pantothenic acid (B5), pyridoxine-B6 (as P-5-P) and riboflavin-B2 (as R-5-P) — which play critical roles as enzyme cofactors in the balanced production of stress hormones. The B vitamin profile is a comprehensive spectrum of Bs, most provided in their pre-activated phosphorylated form for superior bioavailability. Vitamin B6 is a key nutrient involved in acceleration of the GABAergic system, a chemical compound responsible for reducing corticotropin-releasing hormone (CRH), which lowers adrenal output of cortisol.⁵ The same review indicates that those who supplement with 3000 mg of vitamin C per day had quicker cortisol recovery after acute stress, in addition to a decrease in cortisol level growth, reduction of muscle pain, and an increase in the processes involved in regeneration among athletes. Similar patterns were discerned with high dose supplementation of vitamins B1, B2, and B3.⁵ Another study found multivitamin supplementation containing B vitamins for 16 weeks in healthy adults led to an overall increased cortisol awakening response, which indicates enhanced adaptive stress response.⁶

It is important to note pantothenic acid's role, as it helps the adrenal glands generate more cortisol when needed. In a study conducted on male rats, the adrenal cells in those given pantothenic acid exhibited higher basal levels of corticosterone than the control rats, demonstrating that pantothenic acid supplementation stimulates the ability of adrenal cells to secrete corticosterone.⁸

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 day B1 supplementation improved the ability to cope with chronic stress through BDNF and ACh modulation as well as enhancing motor activities and memory function.⁹

All of the ingredients in Adrenal Complex are combined in order to synergistically promote proper homeostasis of serum cortisol, nurture healthy hypothalamic-pituitary function, aid in the production and replenishment of depleted catecholamines, support adrenal cortical health, and replete common nutritional deficiencies that can result from chronic stress. Taking Adrenal Complex during exposure to chronic stress may help reduce stress-related side effects.

SUGGESTED LABORATORY STUDIES

Abnormal salivary cortisol on the Adrenal Stress Indices and low catecholamine markers, such as VMA and HVA, found on Organic Acid Tests, may indicate the need for Adrenal Complex and/or Adrenotone™.

Medicinal Ingredients (per capsule):

Pantothenic acid (Calcium d-pantothenate)	125 mg
Cattle (<i>Bos taurus</i>) (Adrenal gland)	100 mg
PABA (para-Aminobenzoic acid).....	50 mg
Vitamin C (Ascorbic acid).....	50 mg
Cattle (<i>Bos taurus</i>) (Adrenal cortex).....	25 mg
N-Acetyl-L-tyrosine (N-Acetyltyrosine).....	25 mg
Vitamin B2 (Riboflavin).....	2.5 mg
Vitamin B6 (Pyridoxal 5-phosphate)	2.5 mg
Thiamine (Thiamine hydrochloride)	1 mg

Non-Medicinal Ingredients: Microcrystalline cellulose, bovine gelatin (capsule), magnesium stearate (vegetable source.) **Recommended Dose:** Adults: Take 2 capsules per day, or as directed by your health care practitioner.

Consider combining with Adrenotone™ for comprehensive adrenal support. Use with caution with pregnant or lactating women, and with individuals on prescription medication, especially sulfonamide drugs. Hypersensitivity has been known to occur; in which case, discontinue use; May cause gastrointestinal discomfort including abdominal rumbling, soft stools or slight constipation.

REFERENCES

For a list of references cited in this document, please visit: http://catalog.designsforhealth.com/assets/itemresources/Adrenal_Complex_References.pdf

Adrenal Complex

Balanced nutritional support for the adrenal glands

Adrenal Complex is a glandular-based formula designed to support overall adrenal function in order to help with optimum stress tolerance and healthy energy levels.

The primary function of the adrenal glands is the release of hormones in response to stress through the production of cortisol – also known as the “stress hormone” – and other compounds such as dopamine, epinephrine and norepinephrine. While small increases in cortisol support homeostasis and aid in regulating the body’s “fight or flight” response, higher than normal levels of cortisol have been shown to deplete the body’s nutrients and negatively impact adrenal performance.

Why include glandulars?

A glandular-based product provides the particular nutrients needed to help support and tonify specific organ tissues. The glandulars selected for Designs for Health’s Adrenal Complex formulation are derived from some of the purest and cleanest sources on the market today. These glandular materials are obtained only from certified BSE-free countries. They are freeze-dried to maintain the integrity and activity of the glandular material.

In keeping with the long-held theory that “like heals like,” Adrenal Complex includes tissue-specific glandulars from both the adrenal cortex and the whole adrenal gland. Rich in an array of nutrients such as vitamins and minerals, they contain protein-like substances which may have specific messenger activity that help target the body’s adrenal tissues to help strengthen and repair these glands.

Highlights

N-acetyl-tyrosine is the most bioavailable form of the amino acid tyrosine and is a critical building block of the hormones and neurotransmitters which are often depleted under chronic stress conditions. Research shows that supplementing with tyrosine may provide specific therapeutic benefits to people experiencing chronic stress.

Vitamin C – its inclusion in Adrenal Complex is critical, as it plays an important role in adrenal hormone production and the maintenance of healthy cortisol levels.

B Vitamins – the comprehensive spectrum of B vitamins in this product serve as enzyme cofactors in the balanced production of stress hormones. To ensure superior bioavailability (meaning that your body can readily use them), most of the B vitamins are included in their pre-activated form.

Recommended Dose:

Take two capsules per day, or as directed by your health care practitioner. If you are pregnant or breastfeeding, or taking sulfonamides consult a health care practitioner prior to use. **Does not contain gluten.**



TO CONTACT DESIGNS FOR HEALTH, PLEASE CALL US AT (877) 414-9388, OR VISIT US ON THE WEB AT WWW.DESIGNSFORHEALTH.CA

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