

# Adaptogenic herbs and nutrients to support stress resilience\*

This information is provided for the use of physicians and other licensed health-care practitioners only. This information is intended for physicians and other licensed health-care providers to use as a basis for determining whether to recommend this product to their patients. This medical and scientific information is not for use by consumers. The dietary supplement products offered by Designs for Sport are not intended for use by consumers as a means to diagnose, treat, cure, prevent, or mitigate any disease or other medical condition.

## WHAT IS ADRENAL FLOW?

Adrenal Flow is a comprehensive blend of nutrients and botanical compounds designed to help the body adapt to stress and support healthy adrenal function.\* The adrenal glands are responsible for regulating a wide variety of processes in the body, most notably the “fight or flight” response to stressful situations, such as during exercise. These glands produce several hormones and neurotransmitters, some of which are designed to help regulate energy production and mood on an ongoing basis, whereas others are intended to be released only in short bursts, to help power someone through brief moments of intense stress or vigilance.

## FORMULA HIGHLIGHTS

- Delivers clinically relevant amounts of B vitamins and vitamin C, which support energy production, adrenal function, and healthy stress responses, and may help mitigate the fatigue associated with suboptimal adrenal function\*
- Features N-acetyl-L-tyrosine, the most bioavailable form of tyrosine, which is a critical building block of various neurotransmitters, thyroid hormones, and catecholamines, all involved in mood and coping with stress\*
- Contains a blend of standardized adaptogenic botanicals, including eleuthero, American ginseng, ashwagandha, rhodiola, and licorice root, all known to be tonifying and rejuvenating to the adrenal glands\*
- Gluten-free, soy-free, dairy-free; non-GMO
- NSF Certified for Sport®

## CLINICAL EVIDENCE

### Supports a Healthy Stress Response\*

Cortisol, a key hormone released by the adrenal glands, is produced in response to stress, including the healthy stress of exercise.<sup>1</sup> Ashwagandha may support one's response to stress by helping to lower cortisol in the body, which may support healthy energy production and recovery.<sup>2</sup> Licorice root, supplied in a small but important amount in this formula, supports healthy cortisol metabolism within the adrenal glands and may be beneficial in promoting healthy stress responses.<sup>3</sup> Vitamin C plays a central role in the health of the adrenal glands and may also support a healthy response to stress.<sup>4</sup>

### May Improve Exercise Performance and Recovery\*

The combination of herbs in Adrenal Flow may support cardiorespiratory endurance through VO<sub>2</sub> max.<sup>5</sup> A double-blind placebo-controlled study on 50 healthy men and women found that those who supplemented with 300 mg daily of ashwagandha for 12 weeks experienced improved VO<sub>2</sub> max by 5.67% compared to 1.86% in the placebo group.<sup>5</sup> Another herb that shows efficacy for supporting cardiovascular health is eleuthero.\* A small randomized controlled trial (RCT) that looked at nine recreationally active college-aged cyclists found that after eight weeks of supplementing with 800 mg/day of eleuthero, they exhibited an improvement in VO<sub>2</sub> max by 12%, endurance time by 23%, and capacity for increased heart rate by 4% compared to eight weeks of supplementing a placebo.<sup>6</sup> When it comes to recovery, vitamin C plays a foundational role in collagen synthesis, which promotes tendon, joint, and ligament health.\* Supplementing with vitamin C has the potential to support the natural healing process of damaged soft tissue after musculoskeletal injury.<sup>7</sup> American ginseng has also exhibited potential benefit in attenuating damage to muscles during high-intensity short-term exercise as seen through its ability to lower creatine kinase, a marker of muscle damage.<sup>8</sup>



### May Support Cognition\*

Quick decision-making is crucial during physical exertion, such as in competitive scenarios. Supplementing with tyrosine, as featured in Adrenal Flow, may help counter the occasional decline in cognitive performance that can occur during stressful events due to its role as a precursor to catecholamine production (dopamine, norepinephrine, and epinephrine).<sup>9</sup> A placebo-controlled study (n = 15) put the subjects in cold-

water immersions and supplemented with either 300 mg/kg of body weight of tyrosine or a placebo. The group that supplemented with tyrosine were able to mitigate the cold-induced reductions of cognitive performance, such as working memory, compared to the placebo group.<sup>10</sup> Tyrosine supplementation may also support goal-focused decision-making by supporting catecholamine synthesis.<sup>9</sup>

May Support Energy Status\*

Feeling energetic is crucial for both starting and sustaining athletic activities. *Rhodiola roseacea*, ginseng, and eleuthero may support energy production.<sup>6,11</sup> For instance, in an RCT of 30 healthy college students, those who supplemented with 144 mg twice a day of *rhodiola roseacea* for one week experienced significantly improved feelings of being fatigued compared to those who were supplementing with a placebo.<sup>11</sup>

BENEFITS

- Supports a healthy stress response<sup>2,3</sup>
- May improve exercise performance and recovery<sup>5-8</sup>
- May support cognition, especially in relation to goal-setting and competitive scenarios<sup>9,10</sup>
- May support energy production for athletes<sup>6,11</sup>

HOW TO TAKE

Adrenal Flow may be best used to replenish vitamins depleted during periods of stress, to support physiological resistance to intense training, and aid in replenishing catecholamines.\*  
As a dietary supplement, take three capsules per day with meals, or as directed by your health-care practitioner (divided dosing recommended).

GENERAL ADAPTATION SYNDROME

PHASE 1	PHASE 2	PHASE 3
Alarm Phase <ul style="list-style-type: none"><li>• Overactive adrenal glands</li><li>• High amounts of stress hormone output (ie. cortisol, epinephrine, norepinephrine)</li></ul>	Adaptation Phase <ul style="list-style-type: none"><li>• Increased resistance to stress</li><li>• Body attempts to adapt to stress</li><li>• “Wired and tired” feeling</li></ul>	Exhaustion Phase <ul style="list-style-type: none"><li>• Hormone output decreases</li><li>• Fatigue, low mood, low motivation</li><li>• Difficulty tolerating stress</li></ul>



**SUPPORTS OPTIMAL ADRENAL FUNCTION\***

**SUPPORTS HEALTHY CORTISOL METABOLISM\***

**COMPREHENSIVE BLEND OF NUTRIENTS AND BOTANICALS\***

### Supplement Facts

Serving Size 3 capsules  
Servings Per Container 30

Amount Per Serving	% Daily Value
Vitamin C (as Ascorbic Acid)	100 mg 111%
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%
Eleuthero (Eleutherococcus senticosus) (root)[standardized to contain 0.8% eleutherosides]	250 mg *
American Ginseng (Panax quinquefolius) (root)[standardized to contain 5% ginsenosides]	100 mg *
Ashwagandha (Withania somnifera) (root)[standardized to contain 1.5% withanolides]	100 mg *
Rhodiola (Rhodiola rosea)(root) [standardized to contain 3% rosavins and 1% salidroside]	100 mg *
N-Acetyl L-Tyrosine	75 mg *
Licorice (Glycyrrhiza glabra)(root)	20 mg *

\*Daily Value not established.

Other Ingredients: Microcrystalline cellulose, cellulose (capsule), vegetable stearate.





**WARNING:** Use with caution with patients who are pregnant or lactating, or with those who have hypertension, diabetes, or have had kidney or liver disorders. Advise patients to discontinue use and consult you if they experience sleeplessness, headache, or heart palpitations when using Adrenal Flow.

\*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.

ADP090-DS

# References

1. Caplin A, Chen FS, Beauchamp MR, Puterman E. The effects of exercise intensity on the cortisol response to a subsequent acute psychosocial stressor. *Psychoneuroendocrinology*. 2021;131:105336. doi:10.1016/j.psyneuen.2021.105336
2. Bonilla DA, Moreno Y, Gho C, Petro JL, Odriozola-Martínez A, Kreider RB. Effects of ashwagandha (*Withania somnifera*) on physical performance: systematic review and Bayesian meta-analysis. *J Funct Morphol Kinesiol*. 2021;6(1):20. doi:10.3390/jfmk6010020
3. Al-Dujaili EAS, Kenyon CJ, Nicol MR, Mason JI. Liquorice and glycyrrhetic acid increase DHEA and deoxycorticosterone levels in vivo and in vitro by inhibiting adrenal SULT2A1 activity. *Mol Cell Endocrinol*. 2011;336(1-2):102-109. doi:10.1016/j.mce.2010.12.011
4. McCabe D, Lisy K, Lockwood C, Colbeck M. The impact of essential fatty acid, B vitamins, vitamin C, magnesium and zinc supplementation on stress levels in women: a systematic review. *JBI Database System Rev Implement Rep*. 2017;15(2):402-453. doi:10.11124/JBISRI-2016-002965
5. Choudhary B, Shetty A, Langade DG. Efficacy of ashwagandha (*Withania somnifera* [L.] Dunal) in improving cardiorespiratory endurance in healthy athletic adults. *Ayu*. 2015;36(1):63-68. doi:10.4103/0974-8520.169002
6. Kuo J, Chen KW, Cheng IS, Tsai PH, Lu YJ, Lee NY. The effect of eight weeks of supplementation with *Eleutherococcus senticosus* on endurance capacity and metabolism in humans. *Chin J Physiol*. 2010;53(2). doi:10.4077/CJP.2010.AMK018
7. DePhillipo NN, Aman ZS, Kennedy MI, Begley JP, Moatshe G, LaPrade RF. Efficacy of vitamin C supplementation on collagen synthesis and oxidative stress after musculoskeletal injuries: a systematic review. *Orthop J Sports Med*. 2018;6(10):2325967118804544. doi:10.1177/2325967118804544
8. Hsu CC, Ho MC, Lin LC, Su B, Hsu MC. American ginseng supplementation attenuates creatine kinase level induced by submaximal exercise in human beings. *World J Gastroenterol*. 2005;11(34):5327-5331. doi:10.3748/wjg.v11.i34.5327
9. Mathar D, Erfanian Abdoust M, Marrenbach T, Tuzsus D, Peters J. The catecholamine precursor tyrosine reduces autonomic arousal and decreases decision thresholds in reinforcement learning and temporal discounting. *PLoS Comput Biol*. 2022;18(12):e1010785. doi:10.1371/journal.pcbi.1010785
10. O'Brien C, Mahoney C, Tharion WJ, Sils IV, Castellani JW. Dietary tyrosine benefits cognitive and psychomotor performance during body cooling. *Physiol Behav*. 2007;90(2-3):301-307. doi:10.1016/j.physbeh.2006.09.027
11. Schutgens FWG, Neogi P, Van Wijk EPA, Van Wijk R, Wikman G, Wiegant FAC. The influence of adaptogens on ultraweak biophoton emission: a pilot-experiment. *Phytother Res*. 2009;23(8):1103-1108. doi:10.1002/ptr.2753