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defenSE

Fight adrenal fatigue and improve  
your body's response to stress.†

DIETARY SUPPLEMENT  
60 CAPSULES

## Supplement Facts

Serving Size 2 Capsules  
Servings Per Container 30

2 capsules contain	Amount Per Serving	% Daily Value
Ashwagandha Root Extract (Standardized to contain 1.5% Withanolides)	250 mg	*
Skullcap Root Extract (Standardized to contain 30% Flavones as S. baicalensis)	250 mg	*
Eleuthero Root Extract (Standardized to contain 0.8% Eleutherosides)	200 mg	*
Rhodiola rosea Root Extract (Standardized to contain 3% Rosavins)	200 mg	*
L-Theanine	100 mg	*
Phosphatidylserine (from Soy Lecithin)	100 mg	*

\* Daily Value not established

† This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Other Ingredients: Natural Vegetable Capsules, Magnesium Stearate, Calcium Silicate, and Stearic Acid. Contains Soy. Suntheamer<sup>®</sup> is a registered trademark of Taiyo International, Inc.

SUGGESTED USE- 2 capsules 1-2 times per day or as recommended by your health care professional. Formulated to be free of allergens derived from: Gluten, corn, yeast, artificial colors and flavors. Do not consume this product if you are pregnant or nursing. Consult your physician for further information. As with all dietary supplements, some individuals may not tolerate or may be allergic to the ingredients used. Please read the ingredient panel carefully prior to ingestion. Cease taking this product and consult your physician if you have negative reactions upon ingestion. KEEP CONTAINER TIGHTLY CLOSED. STORE AT ROOM TEMPERATURE. KEEP OUT OF REACH OF CHILDREN. This product was sealed for your protection. Do not use if outer logoed neck seal or inner-seal is missing or damaged. 919.003G

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Product #919060



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Frederick, MD 21702

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\*Improves Stress Resilience

\*Strengthens the Body's Stress Response

\*Supports Healthy Energy Levels

\*Improves Mental and Physical

\*Performance Supports Healthy Cortisol Levels

# ENDOCRINE HEALTH

defenSE contains a blend of adaptogenic botanicals and nutrients specifically formulated to counteract the effects of daily stress and support healthy energy levels. defenSE provides a unique blend of "stress adapting botanicals" that support the body's resistance to fatigue and help to maintain balanced cortisol and DHEA levels.

## Overview

Stress is defined as any disturbance –extreme cold or heat, psychological stress, sleep deprivation, work overload, physical trauma, as well as toxic exposure- that can trigger the stress response. The body's stress response system is comprised of the hypothalamic-pituitary-adrenal (HPA) axis. Prolonged stress triggers the HPA axis and consists of three stages: alarm, resistance and exhaustion.

The initial, short-lived phase is the body's normal fight-or-flight response to danger, characterized by elevated cortisol levels. The subsequent resistance phase allows the body to continue buffering extended stress exposure, long after the initial fight-or-flight response has dissipated. Hormones released by the adrenals, such as cortisol and DHEA, help support the "resistance" reaction. Extended periods of stress not only burden the system, creating an imbalance in cortisol and DHEA production, but can result in mental and physical fatigue, nervous tension, irritability and poor memory- all of which are characteristic of stage 3. **defenSE** provides a unique blend of botanicals and nutrients that support the stress response, particularly promoting cortisol balance during the initial alarm phase.

## L-Theanine†

L-theanine is an amino acid found abundantly in green tea. L-theanine has been shown to quickly improve stress perception and resilience. The stress-buffering mechanisms of L-theanine have been connected to the ability of L-theanine to increase serotonin and dopamine production in the brain.<sup>1</sup> L-theanine has also been shown to significantly increase alpha brain wave activity, which is critical for increasing attention and promoting a sense of relaxation.<sup>2</sup> In a study using 16 healthy volunteers, electroencephalograph (EEG) readings of participants were recorded following the ingestion of 50 mg of L-theanine. The researchers found a significant increase in alpha brain wave activity versus placebo.<sup>2</sup> L-theanine has also been shown to have a protective effect for nerve cells and reduces excitatory glutamate activity in the brain.<sup>3</sup>

## Phosphatidylserine†

Phosphatidylserine is a phospholipid that is found in high concentrations in the brain. In studies administering phosphatidylserine (50-800 mg) to subjects under stress (physical, emotional, mental, etc.), it has been found that phosphatidylserine reduces stress-induced excretion of cortisol.<sup>4-7</sup> Administration of phosphatidylserine has also been studied in exercising subjects. It has been demonstrated that phosphatidylserine reduces the cortisol response to overtraining, resulting in a reduction in perceived muscle soreness and improvement in athletic performance.<sup>8-10</sup>

## Ashwagandha Root Extract†

Ashwagandha's strong adaptogenic properties provide several benefits for individuals that have compromised health due to extreme stress exposure. Ashwagandha's benefits include

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improving stress resilience, supporting immune response, regulating the sleep cycle, supporting healthy thyroid function and protecting against exhaustion of the nervous system.<sup>11</sup> Ashwagandha has shown to be beneficial in supporting proper mood regulation and restoring a sense of calmness under stress.<sup>11</sup>

### Rhodiola rosea Root Extract†

*Rhodiola rosea* has been categorized as an adaptogenic botanical due to its ability to increase resistance to a variety of stressors.<sup>12</sup> *Rhodiola* has been studied extensively and is widely used in Eastern Europe and Asia to help support the nervous system, mood regulation, mental clarity, work performance and the sleep cycle.<sup>12</sup> Within the central nervous system, *Rhodiola* has demonstrated an ability to preserve levels of neurotransmitters such as serotonin, dopamine and norepinephrine. In a randomized, double-blind, placebo-controlled study examining the effects of *Rhodiola* on fatigue and stress, 161 patients aged 19 to 21 years received *Rhodiola* twice daily resulting in a significant reduction in fatigue.<sup>13</sup> An additional study using *Rhodiola* extract in students showed significant improvements in mental performance, greater mood stability, and improved sleep patterns.<sup>14</sup>

### Eleuthero Root Extract†

*Eleutherococcus senticosus* has also been identified as a strong adaptogenic botanical and is widely used in China to improve general health, support memory and endurance.<sup>15</sup> In addition to its ability to improve stress resilience and fight fatigue, Eleuthero has exhibited immune supporting effects.<sup>16</sup> In a double-blind study, 45 healthy volunteers received Eleuthero or placebo for 30 days. A cognitive challenge test was given to assess stress response, along with heart rate. Unlike placebo, subjects receiving Eleuthero demonstrated a 40% reduction in heart rate in response to the stressor.<sup>17</sup> Eleuthero has also been shown to improve performance in runners. In a study on performance athletes, Eleuthero extract (2 or 4 mL) given 30 minutes prior to a race significantly reduced race time (48.7 minutes) compared to the control group (52.6 minutes).<sup>18</sup>

### Skullcap Root Extract†

Native to China and parts of Russia, skullcap root (*Scutellaria baicalensis*) has been used in traditional Chinese medicine for its immune supporting properties. *S. baicalensis* has flavanoids which provide numerous protective effects including antioxidant activity and protection against pathogens.<sup>19</sup> Skullcap root has also been shown to balance inflammatory compounds and protect against free radicals that cause lipid oxidation.<sup>19</sup>

### Dosage

2 capsules taken one or two times per day, or as recommended by your healthcare professional.

### Does Not Contain

Wheat, gluten, corn, yeast, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners or preservatives.

### Caution

Do not consume this product if you are pregnant or nursing.

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Rhodiola rosea Root Extract (Standardized to contain 3% Rosavins)	200 mg	*
L-Theanine	100 mg	*
Phosphatidylserine (from Soy Lecithin)	100 mg	*
* Daily Value not established		

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## References

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