

Support for a Healthy Stress Response

Developed and reviewed by the clinical, chiropractic, and naturopathic members of the Standard Process team

Stress Response Health and Function

While the term “stress” often carries negative connotations, the stress response is adaptive and essential for human survival. It is mediated via an interplay of endocrine, nervous system, and immune mechanisms that occur in response to stressful stimuli. Both the sympathetic-adreno-medullar (SAM) axis and the hypothalamus-pituitary-adrenal (HPA) axis drive the stress response. The SAM axis is responsible for mediating the “fast” stress response and leads to increased secretion of norepinephrine and epinephrine which are both neurotransmitters and hormones. Activation of the HPA axis drives the “slow” stress response and leads to the release of the hormone cortisol.

Nearly all cells in the body have receptors for at least one of the three main stress hormones— norepinephrine, epinephrine, and cortisol—and the stress response encompasses a wide range of physiological and psychological changes. For example, contraction of smooth and cardiac muscle cells leads to vasoconstriction which results in increased cardiac output, skeletal muscle blood flow, heart rate, and blood pressure. Thermogenesis, lipolysis, and gluconeogenesis are upregulated. The stress response also drives behaviors such as vigilance and alertness. Intestinal motility is reduced as the nervous system shifts from a parasympathetic to a sympathetic state which is primed to respond to threats or challenges.

While short-term stressors enhance physical and mental performance, chronic stress can lead to physiological imbalances in immune function, metabolic processes, self-repair mechanisms, physical performance, and cognitive function.¹

Supportive Lifestyle Practices

- Encourage ample time in nature. “Forest bathing” (Shinrin-yoku) is a Japanese concept that describes walking in a

forested area while inhaling fragrant compounds— known as phytoncides—that are released by trees. Forest bathing has been shown to support healthy blood pressure and immune function, suppress the sympathetic nervous system, activate parasympathetic activity, and lower cortisol levels.²

- Emphasize the importance of adequate and restful sleep. Poor sleep and chronic stress have a reciprocal relationship: each can worsen the other. Sleep deprivation has been shown to negatively alter HPA axis activity while quality sleep can support healthy cortisol levels and lead to improvements in physical and cognitive function.³

Whole Foods Nutritional Recommendations

- Ensure consumption of foods high in magnesium. Magnesium deficiency is common and chronic stress can deplete the body of this essential mineral.⁴ Magnesium promotes the activity of gamma-aminobutyric acid (GABA), an important inhibitory neurotransmitter that is known for its calming effect on the nervous system.⁴ Whole food sources of magnesium include nuts and seeds, cheese, legumes, whole grains, and green vegetables such as kale, spinach, and Swiss chard.⁵
- Encourage consumption of foods rich in vitamin C such as citrus fruit, red bell pepper, and strawberries. The tissue of the adrenal gland is highly concentrated in vitamin C and this essential vitamin is a necessary co-factor for the biosynthesis of norepinephrine and epinephrine and adrenal steroidogenesis.⁶
- Recommend the elimination of “energy” drinks and other sources of high caffeine. Caffeine stimulates the secretion of the key stress hormones cortisol, norepinephrine, and epinephrine.⁷ Green tea has a fraction of the caffeine in coffee and energy drinks and is a good source of the soothing amino acid L-theanine.⁸

Dietary Supplement Regimen



Min Tran®

Suggested Use: **3 tablets twice per day**

Min-Tran®, a vegetarian nervous system support supplement, is a good source of magnesium, which supports the actions of neurotransmitters that help regulate mood.*

- A good source of magnesium, which may play a role in the stress response pathway and is involved in pathways that support brain homeostatic sleep processes*



Ashwagandha Forte

Suggested Use: **1 tablet 1-2 times daily**

Ashwagandha Forte is an herbal supplement that contains Ashwagandha root used traditionally as a rejuvenating tonic for stress, immune system and cognition support.*

It is traditionally used in Ayurvedic herbal preparations:

- As a rejuvenating tonic to support the body's natural immune system *
- To support general well-being after challenge*
- To support healthy cognition, learning, and memory*
- As a nervous system relaxant that calms the mind and soothes the nerves*



Adrenal Desiccated

Suggested Use: **2 tablets per day**

Adrenal Desiccated supports endocrine health. The adrenal glands are important in the body's natural response to stress and energy metabolism.*

- Provides powerful short-term adrenal support for immediate energy needs*
- Supports immune system function during times of increased demand*



Drenamin®

Suggested Use: **1 tablet per meal**

Drenamin® is an adrenal function and energy production support supplement, with vitamins involved in the production of neurotransmitters associated with emotional balance.*

- Involved in healthy adrenal gland functions*
- Contains vitamins that are involved in the production of neurotransmitters associated with emotional balance*
- Supports a healthy immune response i.e., to everyday environmental stressors*

Assessment of the Stress Response

In Office/Physical Exam

- Blood pressure, Heart rate, Respiratory rate
- Heart Rate Variability (HRV)

- Cortisol levels via saliva, urine or blood
- Standard Process Stress Assess Questionnaire

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