HPA AXIS (ADRENAL) DYSFUNCTION

What is HPA axis (adrenal) dysfunction?

Hypothalamic-pituitary-adrenal axis (HPA axis) dysfunction is commonly referred to as adrenal dysfunction, or adrenal fatigue, among patients and providers alike. HPA axis dysfunction is an alteration of the stress response resulting in a dysregulation of stress hormones - mainly an alteration in the quantity and/or diurnal pattern of adrenal hormone secretion, including cortisol and DHEA. With over 5,000 current mentions in scientific literature (and growing daily!), the effect of stress on the HPA axis is a common and well-acknowledged health concern that affects people of all ages, genders and backgrounds. Those experiencing HPA axis dysregulation commonly complain of fatigue but may also experience sleep disruptions, weight changes, salt and/or sugar cravings, heightened allergies, anxiousness, nervousness, blood pressure alterations and numerous other symptoms.

Who experiences HPA axis (adrenal) dysfunction?

Saliva testing reveals that HPA axis dysfunction is widespread with functional medicine clinics having observed over 85% of patients experiencing some level of dysregulation. HPA axis dysfunction does not discriminate – it may be experienced by men as well as women, and it can occur at any age. With today's hectic schedules and ever-growing expectations, many individuals in their teens and twenties are already experiencing HPA axis dysfunction.

What causes adrenal dysfunction?

HPA axis dysfunction results from continuous or sudden stress. It may begin abruptly, or as a result of periods of prolonged, repeated stress. Sources of stress may be positive or negative, may or may not be acknowledged by the individual and include (but are not limited to):

- Recurrent disease and illness
- Physical stress: injury, diet, surgery, tobacco/alcohol addiction, etc.
- Emotional stress: marriage, divorce, death of a loved one, strenuous work relationships, a new baby, financial insecurity, etc.
- Environmental stress: chemical pollution of air, water, food, etc.

Identifying HPA axis (adrenal) dysfunction

Salivary hormone testing is the gold standard in measuring cortisol levels and is an easy, non-invasive and convenient way to quantify cortisol output and identify dysregulations in diurnal cortisol patterns.

HPA axis (adrenal) support

Successful support and treatment strategies for those suffering from HPA axis dysfunction include:

- Lifestyle modifications to include exercise, healthy sleep patterns, balanced diet high in vegetables and including healthy fats and proteins, and frequent laughter
- Stress management plans include mindfulness, deep breathing exercises, breaks for rest and self-time
- Avoidance of caffeine, alcohol, refined sugars, and any food allergies/sensitivities

Individualized treatment plans may include the following:

- Supplementation of dietary cofactors necessary for mitigating the stress response and cortisol production including Vitamins C, B5, B6 and E
- Botanical adaptogen therapy including licorice, rhodiola, ashwaganda, etc.
- Adrenal glandular supplementation
- Physiologic cortisol supplementation
- Phosphorylated serine supplementation (elevated cortisol levels only)

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It is important to note that the different stages of HPA axis (adrenal) dysfunction may all present with the same symptoms, though severity may fluctuate and treatment protocols can be significantly different depending on the diurnal cortisol pattern and overall volume of production for each individual patient. Testing adrenal function is a critical first step in devising the correct treatment plan for your patients. The Labrix by Doctor's Data HPA Axis (Adrenal) Dysfunction Stages and Considerations handout contains further details on specific treatment recommendations.

Phases of HPA Axis (adrenal) dysfunction:

PHASE 0	Healthy adrenal response (cortisol levels within optimal range with desired diurnal rhythm)
PHASE 1	Early adrenal dysfunction (elevated/high range AM with HPA blunting thereafter); acute fight or flight (increased HPA tone); HPA axis dysfunction (zigzag patterns, or cortisol rising at night)
PHASE 2	Evolving adrenal dysfunction (Suboptimal AM cortisol with HPA blunting thereafter)
PHASE 3	Established adrenal dysfunction / Hypoadrenia (Low AM cortisol with HPA blunting thereafter)

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