

A Comprehensive Tool To Assess The HPA Axis – Stress Response And Resiliency



Adrenocortex Stress Profile

CLINICIAN INFORMATION

CLINICAL INSIGHT INTO ADRENAL HORMONE LEVELS

The **Adrenocortex Stress Profile** (ASP) provides an assessment of the Hypothalamic-Pituitary-Adrenal (HPA) axis using carefully timed salivary samples of the hormones cortisol and DHEA. Salivary testing is an easy, non-invasive option to measure unbound, biologically active parent hormone levels. The report offers an easy-to-interpret graphic which plots the results of the cortisol awakening response (CAR) and natural diurnal rhythm.

The **Adrenocortex Stress Profile** (ASP) requires four salivary samples measured throughout the day to give insight into cortisol's natural circadian diurnal rhythm.

The **Cortisol Awakening Response** (CAR) can be added to the ASP by providing two additional awakening salivary samples to reflect HPA axis resiliency and provide the most comprehensive look at cortisol and the HPA axis.

DHEA is measured once in the 7:00 AM – 9:00 AM sample and a ratio of DHEA to cortisol is calculated to provide insight into anabolic/catabolic balance.

Imbalances in adrenal hormones can have a wide range of negative consequences that can adversely impact a patient's overall quality of life. Adrenocortex Stress Profile testing can reveal these imbalances and provide direction for clinical

Cortisol Awakening Response is a transient, immediate rise in cortisol upon awakening and is distinct from the diurnal rhythm. CAR reflects a person's ability to cope with anticipated challenges and their perception of control around chronic stress, providing insight into HPA axis resiliency.¹

intervention with targeted therapeutic treatments such as nutrient support and/or adaptogens, stress management, behavioral modification and lifestyle interventions.

Daily hassles, chronic pain, blood sugar dysregulation, work stressors, and poor relationship quality can alter the HPA axis and contribute to chronic disease.² The symptoms of HPA axis dysfunction can be vague and are highly variable but may include: fatigue, insomnia, weight gain, depression, GI complaints, and chronic pain. HPA axis dysfunction is associated with many conditions including:

- hypertension
- cardiovascular disease
- gastrointestinal and immune dysregulation
- diabetes and metabolic syndrome
- depression
- chronic fatigue
- persistent pain
- neurodegenerative disease and cognitive decline²⁻¹⁰



FATIGUE



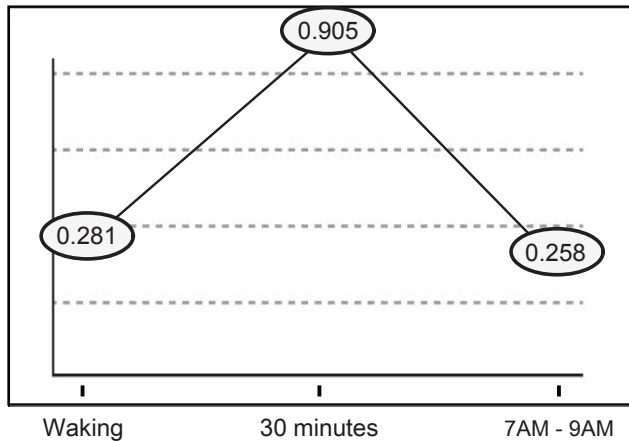
INSOMNIA



WEIGHT ISSUES

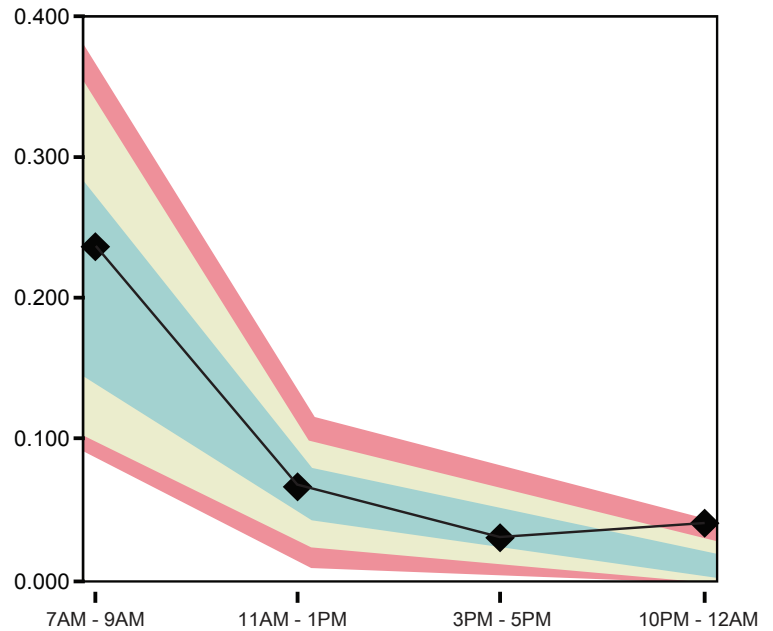
Cortisol Awakening Response, Salivary Cortisol, and DHEA

Cortisol Awakening Response

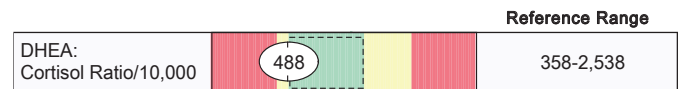
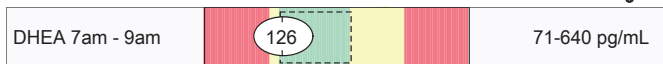


Percent Increase **62** Expected: >50%

Salivary Cortisol



DHEA



Results

	Waking*	30 minutes*	7AM - 9AM*	11AM - 1PM*	3PM - 5PM*	10PM - 12AM*
Patient Results (mcg/dL) >>	0.281	0.905	0.258	0.066	0.039	0.048
Reference Range (mcg/dL) * Based on Collection Times	N/A	N/A	.097 - .337	.027 - .106	.013 - .068	<= .034
Actual Collection Time	6:15AM	6:45AM	7:00AM	12:00PM	4:45PM	10:30PM

Biomarkers
Cortisol
DHEA

Specimen Requirements

- **Adrenocortex Stress Profile:**
Four saliva samples collected at specific times over a one-day period
- **Adrenocortex Stress Profile with add-on Cortisol Awakening Response:**
Six saliva samples collected at specific times over a one-day period

Related Profiles

- Menopause Plus
- Rhythm Plus
- Male Hormones Plus
- One Day Hormone Check

References

1. Fries E, Dettenborn L, Kirschbaum C. The cortisol awakening response (CAR): facts and future directions. *Int J Psychophysiol.* 2009;72(1):67-73.
2. Saxbe DE. A field (researcher's) guide to cortisol: tracking HPA axis functioning in everyday life. *Health Psych Rev.* 2008;2(2):163-190.
3. Ennis GE, Moffat SD, Hertzog C. The cortisol awakening response and cognition across the adult lifespan. *Brain Cogn.* 2016;105:66-77.
4. Heim C, Nater UM, Maloney E, Boneva R, Jones JF, Reeves WC. Childhood trauma and risk for chronic fatigue syndrome: association with neuroendocrine dysfunction. *Arch Gen Psych.* 2009;66(1):72-80.
5. Dedovic K, Ngiam J. The cortisol awakening response and major depression: examining the evidence. *Neuropsych Dis Treat.* 2015;11:1181-1189.
6. Bengtsson I, Lissner L, Ljung T, Rosengren A, Thelle D, Wahrborg P. The cortisol awakening response and the metabolic syndrome in a population-based sample of middle-aged men and women. *Metabolism.* 2010;59(7):1012-1019.
7. Hackett RA, Kivimäki M, Kumari M, Steptoe A. Diurnal Cortisol Patterns, Future Diabetes, and Impaired Glucose Metabolism in the Whitehall II Cohort Study. *J Clin Endocrinol Metab.* 2016;101(2):619-625.
8. Kern S, Krause I, Horntrich A, Thomas K, Aderhold J, Ziemssen T. Cortisol awakening response is linked to disease course and progression in multiple sclerosis. *PLoS One.* 2013;8(4):e60647.
9. Girod JP, Brotman DJ. Does altered glucocorticoid homeostasis increase cardiovascular risk? *Cardiovasc Res.* 2004;64(2):217-226.
10. Hamer M, O'donnell K, Lahiri A, Steptoe A. Salivary cortisol responses to mental stress are associated with coronary artery calcification in healthy men and women. *Eur Heart J.* 2009;31(4):424-429.

