



YOUR LAB of CHOICE

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## Stress & Sleep Profile Options



### ADRENAL STRESS

Shows changes in adrenal hormone production as a result of stress or adrenal dysfunction.

Saliva: diurnal cortisol (x4) plus DHEA-S



### CORTISOL AWAKENING RESPONSE

Reveals detailed clues that help in assessing adrenal hormone/HPA axis dysfunction, particularly in cases of PTSD, major depression, severe stress, and chronic fatigue.

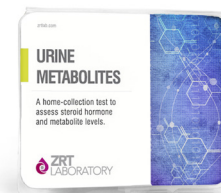
Saliva: diurnal cortisol (x6) plus DHEA-S



### SLEEP BALANCE

Helps pinpoint imbalances of melatonin and cortisol circadian rhythms associated with acute or chronic sleep disturbances. Epinephrine and norepinephrine diurnal tests give a fuller picture when there are adrenal issues.

Dried urine: diurnal melatonin (x4), free cortisol (x4), free cortisone (x4); optional add-ons epinephrine (x4), norepinephrine (x4)



### URINE METABOLITES

The Adrenal Profile Gives a full picture of adrenal hormone production and metabolism in patients with adrenal dysfunction or stress.

Dried urine, Adrenal Profile: DHEA, total cortisol, free cortisol (x4), total cortisone, free cortisone (x4), tetrahydrocortisol, tetrahydrocortisone



### NEUROTRANSMITTERS

A complete picture if additional mood symptoms are present including anxiety or depression, as serotonin, dopamine, and glutamate may also contribute to overlapping symptoms.

Dried urine, NeuroAdvanced Profile (14 neurotransmitter tests) plus Diurnal Cortisol, Melatonin, Norepinephrine & Epinephrine add-on

STRESS & SLEEP TESTING

ZRTLaboratory

# Stress & Sleep Hormone Testing

Discover True Clinical Utility with the Industry's Best Testing

Crater Lake National Park  
OREGON

# Why Test Stress & Sleep Hormones?

The ability to appropriately respond to stress – mental, emotional and physical – is a critical component to maintaining optimal health.

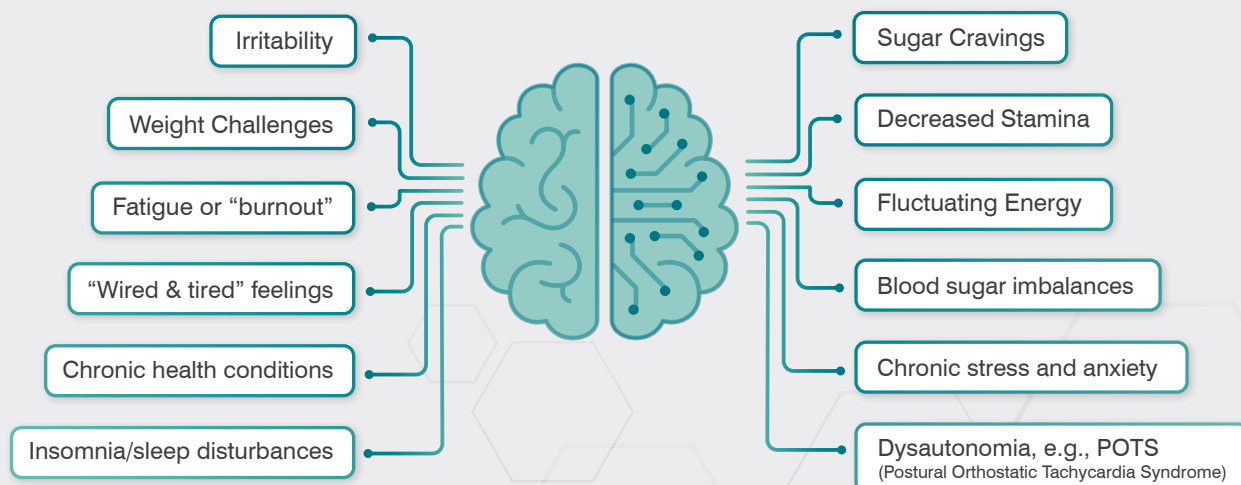
At the most fundamental level, our stress response system is comprised of the Hypothalamic-Pituitary-Adrenal (HPA) axis and the sympathetic neurons that originate in the brainstem and project to the adrenal glands. These are responsible for the production and careful regulation of the stress hormones cortisol, norepinephrine and epinephrine, which help the body respond to internal and external stressors. Downregulation of the HPA axis, due to persistent exposure to stressors, predisposes the body to establish a “stress loop,” with increasingly diminished capacity to self-regulate and a decreased ability to return to baseline. For many people, this translates into distressing symptoms including anxiety, sleep issues, “burnout”, fatigue, frequent illness, irritability, and mood swings.

Evaluating cortisol levels can reveal HPA axis dysfunction. Low morning cortisol and high night cortisol is a common pattern which can contribute to insomnia, chronic awakening, poor quality sleep and fatigue during the day. Melatonin levels may be indirectly influenced by evening wakefulness and other factors, producing challenges in going to sleep and staying asleep. Left unchecked, these dysfunctional patterns of cortisol and melatonin can result in cases of exhaustion and burnout.

“ *Testing your diurnal rhythms is a good start to getting a full assessment.* ”

Understanding the diurnal pattern of cortisol is essential – but creating the most effective treatment plan can be enhanced with additional diurnal curves for cortisone, epinephrine, norepinephrine and melatonin. If additional mood symptoms are present including anxiety or depression, consider including the diurnal cortisol, melatonin, norepinephrine and epinephrine add-on with a full NeuroAdvanced Profile test, because serotonin, dopamine, and glutamate may contribute to symptoms.

## PATIENTS SHOULD TEST IF THEY EXPERIENCE:



### MOST COMPLETE

ZRT reports offer diurnal hormone levels – providing a more detailed diagnostic tool for practitioners



### MOST CONVENIENT

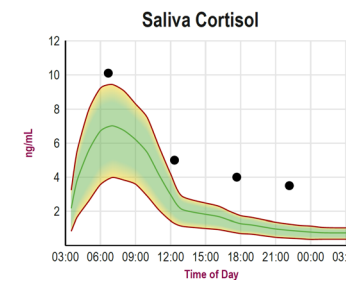
Testing in saliva or dried urine is easy and convenient when sampling 4 times in one day



### MOST COMPREHENSIVE

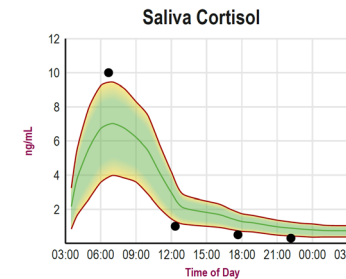
ZRT offers diurnal assessments for all stress & sleep hormones – providing the broadest evaluation possible

# Cortisol Diurnal Curves



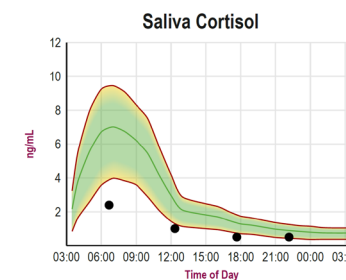
### Chronic Stress

Overall higher than normal cortisol production throughout the day can result from prolonged stress. Symptoms include feeling “tired but wired,” food cravings, disturbed sleep and anxiety.



### Adrenal Dysfunction

An elevated morning cortisol with levels dropping off rapidly during the day manifests as a mid-day drop in energy, drowsiness, sugar cravings, and poor exercise recovery.



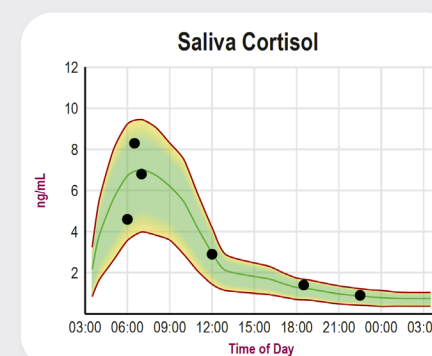
### Adrenal Exhaustion or Burnout

This pattern is really a reflection of low overall cortisol during the day. General symptoms include day-long fatigue, irritability, food cravings, insomnia, and exhaustion.

## Saliva Versus Urine Curves

While saliva provides an instantaneous assessment at the time of collection (minutes), urinary cortisol reflects an average of the time since the last void (hours). So when viewing a urine cortisol curve, we expect the first collection to be low – revealing overnight cortisol production. The peak of adrenal production should be revealed in the second morning urine collection.

## ASSESSING THE CORTISOL AWAKENING RESPONSE



Cortisol levels show a temporary boost between the moment of waking and 30 or so minutes after rising, returning to the initial waking level at 60 minutes after waking. The magnitude of this transient rise in cortisol levels, called the Cortisol Awakening Response (CAR), assesses the HPA axis's ability to activate and respond to the magnitude of all the stressors that face us as we awaken and begin the day. Three, rather than one, early morning collections are needed to capture the CAR: one immediately on waking, one 30 minutes later, and another at 1 hour. The other three collections are done as usual – before lunch, dinner, and bedtime.

This testing is often useful for cases of PTSD, major depression, severe stress and chronic fatigue.