

Announcing HPA Stress Profiles with Cortisol Awakening Response

Dear Valued Client,

In the spirit of continuous improvement and aligning our testing services with the most current science and research, BioHealth is moving away from Adrenals Stress Profiles to what are known as HPA Stress Profiles, for a number of reasons that will, collectively, help you and your patients achieve a higher state of clinical success.

Led largely by the extensive efforts of Thomas Guiliams, PhD, of the Point Institute®, as documented in his breakthrough book *The Role of Stress and the HPA Axis in Chronic Disease Management*, we are making important changes to the vernacular we use, the kits and instructions we provide, and the reporting of test results. Below is a FAQ that addresses these changes.

And while this is a leap forward in progress, we can assure you that the changes are not drastic or difficult to adopt. Our team is here to help you make the most of this exciting time in functional medicine.

Please refer to the attached test fee schedule, sample report, and other documents for additional information.

HPA Stress Profile FAQ

Is the Adrenal Stress Profile going away?

The Adrenal Stress Profile variations (e.g. #201 and #205-S) will continue to be available for order, however we will no longer promote them. Cortisol and DHEA-S testing continues in a more refined manner with the new profiles. We encourage clients to do follow-up testing using the same tests they did before, since doing the upgraded profile will likely yield variations and you won't have an "apples to apples" comparison. That said, moving on and performing the new profiles is the most logical move, as soon as it's possible.

Why the name change to "HPA Stress Profiles?"

While it is important for our industry to start using the proper terminology to describe the stress response and associated clinical concepts, this is more than a name change, as the section below explains. We are moving away from the term "Adrenal Stress" because it's about much more than the adrenal glands; they are but one important part of the HPA Axis which is the true physiological structure responsible for adaptation to stress (as described in the attached paper, *Changing Paradigms in "Adrenal" Stress Assessment*).

What do the test results look like? Are they different than before?

We have made improvements to the design of all of our test reports, while keeping them simple and easy to use. Attached is a sample report for the most comprehensive HPA/CAR profile, including melatonin, sex hormones, and secretory IgA.

What is changing to the Stress Profiles?

The upgrades we made are based on the latest research as established in scientific literature:

- **Cortisol Awakening Response**
 - We now offer the stress profiles with the option of testing the Cortisol Awakening Response (CAR). CAR is the rise in cortisol levels observed at 30 minutes post-awakening (approximately 35-60% above the waking value) followed by an expected decline one hour after waking. The behavior of cortisol is an important physiological response to anticipation of the day ahead and is a key indicator of HPA axis reactivity.
 - The waking, 30 minute, and 60 minute cortisol results comprise something of a "mini stress test" and capture the dynamic rise and decline of cortisol in the first hour after awakening. Research has shown that combining CAR testing with a diurnal cortisol rhythm is a far superior way to assess HPA axis function than diurnal cortisol alone. We offer CAR testing for only \$25 extra to make sure everyone can afford access to this powerful tool.
- **Insistence on a Waking +30-Minute AM Collection**
 - Research shows that the most relevant single morning cortisol measurement is one taken from a sampling performed 30 minutes after waking. This captures the peak of cortisol, providing added relevance to the cortisol sum calculation, as well as the baseline for future follow-ups.
- **Cortisol:DHEA-S Ratio**
 - Research supports a molar ratio of cortisol and DHEA-S taken from the same morning sample. The idea of averaging multiple DHEA-S measurements over the course of the same day has been popular for many years, but it is unsupported by the current peer-reviewed literature.
 - Note that we are changing the unit of measurement for DHEA-S to nmol/L which is the same unit of measurement used for cortisol. This provides a more directly relevant ratio for interpretation.
 - The Cortisol:DHEA-S reference range has been changed to 4-6:1 given the upgrade to molar ratio, as well as current research.
- **Dynamic DHEA-S ranges**
 - The reference ranges for DHEA-S are now based on age and gender and dynamically populated into the report for your convenience.
- **Perceived Stress Survey with CAR Profiles**
 - In addition to collecting samples, patients will complete the Perceived Stress Survey (PSS). The PSS is the most widely used physiological instrument for measuring the perception of stress. Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress. When combined with patient history data, the PSS score, along with CAR, helps to identify the effect mental and emotional stress is having on a patient's HPA function.

We look forward to serving you with the industry's leading HPA axis assessments. Contact us at the numbers below, or through our website, to obtain assistance.