How to assess stress in your patient

In this newsletter, I am going to discuss a condition that affects all of us, some more than others, stress. I will also highlight how to use and interpret two tests offered by Canalt; **Hair Mineral Analysis** as well as the new and improved **Hair Cortisol Test** in assessing the stress response in your patients. There are many ways the body shows physiological stress, and as health practitioners, it is our responsibility to accurately assess and make recommendations to enhance our patients' overall health and wellbeing.

"I feel exhausted all the time." "I can't lose weight." "I feel moodiness and depression" "I am losing my hair." "I can't sleep at night." These are some of the common complaints I get in my office by patients who are experiencing stress. Some patients are not aware of the stress that they place on their bodies, while others need to be convinced of the affects of chronic stress on their current medical conditions. As practitioners, we have to be keen to the negative effects of chronic stress and in helping our patients identify not only the source, and work to alleviate it, but to accurately assess the levels of stress, ultimately the level of cortisol, so that our patients are more aware and have markers that they are working to improve.

The physiological mechanism that mediates stress and contributes to disease states is not fully understood. The most studied response is the neuroendocrine Hypothalamic-Pituitary-Adrenocortical (HPA) axis, which in turn affects other systems like the immune and inflammatory processes. Negative stressors alter corticotrophin releasing hormone (CRH) in the hypothalamus. CRH then influences adrenocorticotropic hormone (ACTH) to be released by the pituitary which then enters the bloodstream with its end point being the cortex of the adrenal gland. The adrenal gland cortex ultimately increases production of cortisol. Chronic high circulating cortisol levels have negative effects on the body, such as slowed wound healing and cognitive impairments to name a few. Hence this stress response through the HPA axis is sought to be the major physiological mechanism through which stress influences disease states. (Karlén et al. BMC Clinical Pathology 2011, 11:12)

Currently, measuring cortisol is the best way to biologically understand the stress response through the HPA axis. Cortisol is most often measured in urine, saliva and blood. Although these methods can be insightful they only cover a spot time interval (24 hours) and are not good at predicting chronic or longitudinal stress. Because of these drawbacks, a better procedure for determining long term exposure to stress was devised. Using hair tissue has become a viable and widely studied means to look at one's stress response over months vs. hours. A study by Lucia et al. demonstrated an increase in hair cortisol in depressed patients versus healthy controls. (Lucia et al. *Stress,* 2011 1-6) A study by Karlen et al., concluded that hair cortisol serves as a retrospective biomarker of increased cortisol reflecting exposure to major life stresses in young adults. (Karlén et al. BMC Clinical Pathology 2011, 11:12) Another study from Karen et al. studied expecting mothers' hair cortisol levels as well their babies. The study concluded that there was a correlation between hair cortisol levels in mothers and their children, suggesting a maternal calibration to the child's HPA axis. (Karlen et.al Pediatrics. 2013)

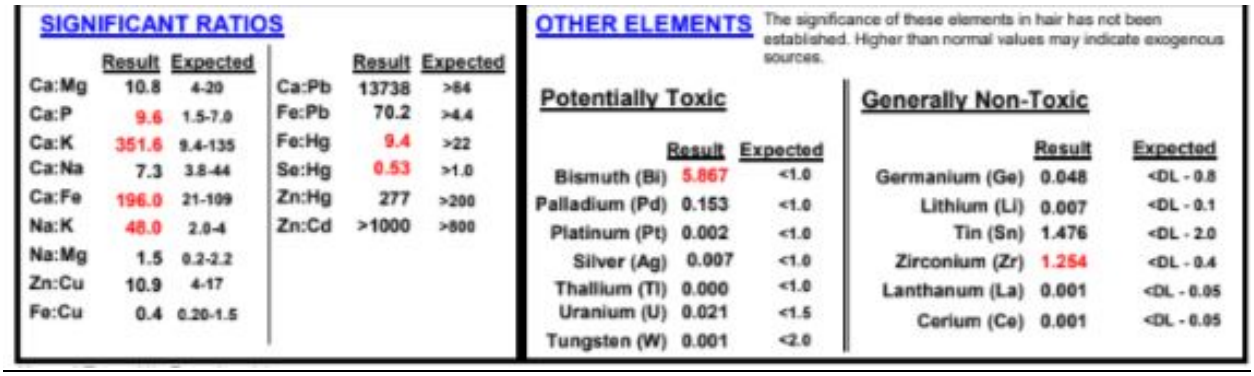
The research is promising and the versatile use in helping so many different types of patients makes this test an asset in my practice. In addition to using Hair Cortisol with your patients, valuable information regarding the adrenal glands can also be taken from the HMA.

As you know, I have been using HMA for many years in my practice- in it's entirety- to assess the health of my patients. If you did not know, there is a section of the test that you can use to extrapolate data

more specific to the adrenal glands. The section of the test that I focus on when it comes to assessing stress in my patients is the Na/K ratio.

Na/K ratio as indicator of adrenal strength

Na level in the hair is a good measure of adrenal strength. When the level of Na is low in the hair, the adrenal effect at the cellular level is reduced. When the Na is elevated, adrenal activity or effect tends to be excessive. Low hair tissue sodium is associated with adrenal activity weakness, fatigue and burnout. It indicates a loss of Na through the kidneys.



SIGNIFICANT RATIOS

	Result	Expected		Result	Expected
Ca:Mg	10.8	4-20	Ca:Pb	13738	>84
Ca:P	9.6	1.5-7.0	Fe:Pb	70.2	>4.4
Ca:K	351.6	9.4-135	Fe:Hg	9.4	>22
Ca:Na	7.3	3.8-44	Se:Hg	0.53	>1.0
Ca:Fe	196.0	21-109	Zn:Hg	277	>200
Na:K	48.0	2.0-4	Zn:Cd	>1000	>800
Na:Mg	1.5	0.2-2.2			
Zn:Cu	10.9	4-17			
Fe:Cu	0.4	0.20-1.5			

OTHER ELEMENTS The significance of these elements in hair has not been established. Higher than normal values may indicate exogenous sources.

Potentially Toxic

	Result	Expected
Bismuth (Bi)	5.867	<1.0
Palladium (Pd)	0.153	<1.0
Platinum (Pt)	0.002	<1.0
Silver (Ag)	0.007	<1.0
Thallium (Tl)	0.000	<1.0
Uranium (U)	0.021	<1.5
Tungsten (W)	0.001	<2.0

Generally Non-Toxic

	Result	Expected
Germanium (Ge)	0.048	<DL - 0.8
Lithium (Li)	0.007	<DL - 0.1
Tin (Sn)	1.476	<DL - 2.0
Zirconium (Zr)	1.254	<DL - 0.4
Lanthanum (La)	0.001	<DL - 0.05
Cerium (Ce)	0.001	<DL - 0.05

Na/K ratio: A low ratio indicates adrenal weakness and exhaustion. A low ratio is associated with less inflammation as well as more tissue breakdown due in part to excess cortisol.

A high Na/K ratio indicates acute stress on the adrenal. A high ratio is associated with more inflammation.

Your patient is stressed, now what?

When it comes to helping patients moderate the stress response, the key thing to keep in mind is meeting patients where they are at with compassion. I have found over my years in practice that simply providing patients with a safe space to talk and share their life struggles is a huge part in helping them heal. People want to be heard and not judged. This is an invaluable asset to any practitioner. Once you develop a rapport with patients, they begin to trust you, open up and become less resistant to change. Educate your patients of the impact of cortisol on their body and then outline ways in which they can lessen the cortisol response. There is no one way fits all approach when it comes to navigating the multiple layers of people's emotional, mental and physical selves. Offering openness, non-judgement and compassion are a great place to start.

Adrenal Support

There are some well known facts about the adrenal glands that can aid in their function and reduce the impact of stress.

The adrenals benefit from having stable energy levels throughout the day, which can be accomplished by eating three balanced meals with two snacks. The quality of the food needs to also be taken into consideration. Enjoying plenty of water, fresh fruits and vegetables and lean protein is key. Avoiding excessive caffeine, alcohol and refined carbohydrates such as potatoes, rice, sugar and flour is also important.

A quality multivitamin and mineral supplement is also essential when it comes to nourishing the body and adrenal glands. Specifically, vitamin C and vitamin B5 are concentrated in the adrenal gland and sufficient amounts enhance its function.

Adaptogenic herbs such as licorice, ashwaghanda, eleuthrococcus and ginseng have a special affinity for supporting the adrenals during times of stress and restoring balance and function.

Getting enough rest is very important for a healthy adrenal gland. Sleeping between the hours of 10 pm – 6 am is noted to be best for adrenal health.

Stress management techniques are also an important aspect of healing and helping people cope with stressful situations in their life. Sometimes, stress cannot be escaped, but instead better controlled. Having a resilient attitude and positive outlook in life can make all the difference. Understanding one's life stressors and helping guide them to eliminate toxic situations or relationships is important in their healing.

Lastly, I will remind you to take good care of YOUR health and adrenals. I know all too well the stress that can come from having a business and taking care of people's health. It can be easy to neglect the self as we care deeply for others. Please be sure to test your levels of cortisol and take good care of yourself.

Much love,

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