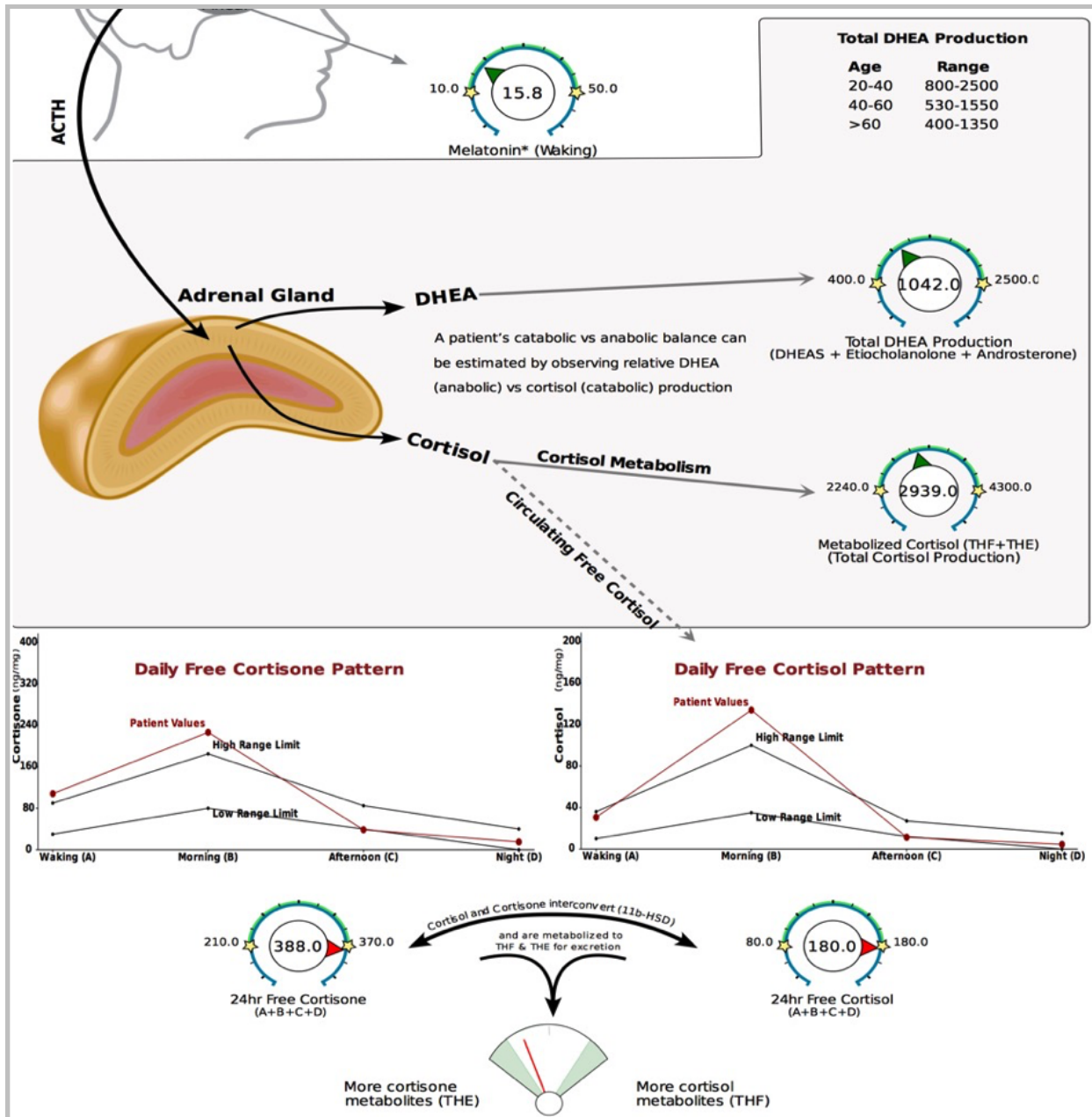


# HPA-D Case Studies - Part 2

Okay, the next case is a 47-year-old female. Chief complaint: She wanted to diagnose and treat chronic disequilibrium that she experienced, muscle aches and fatigue, GI concerns, energy, and hormonal imbalance issues. These symptoms became acute following a major bacterial infection in October 2013, but some of them may have been present in a latent form prior to that time. Her symptoms were really persistent and present nearly every day, but they ebbed and flowed in intensity.



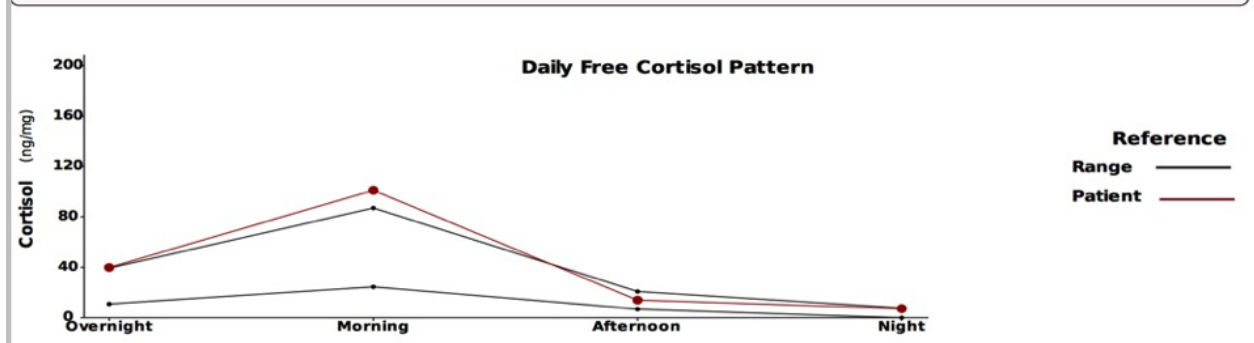
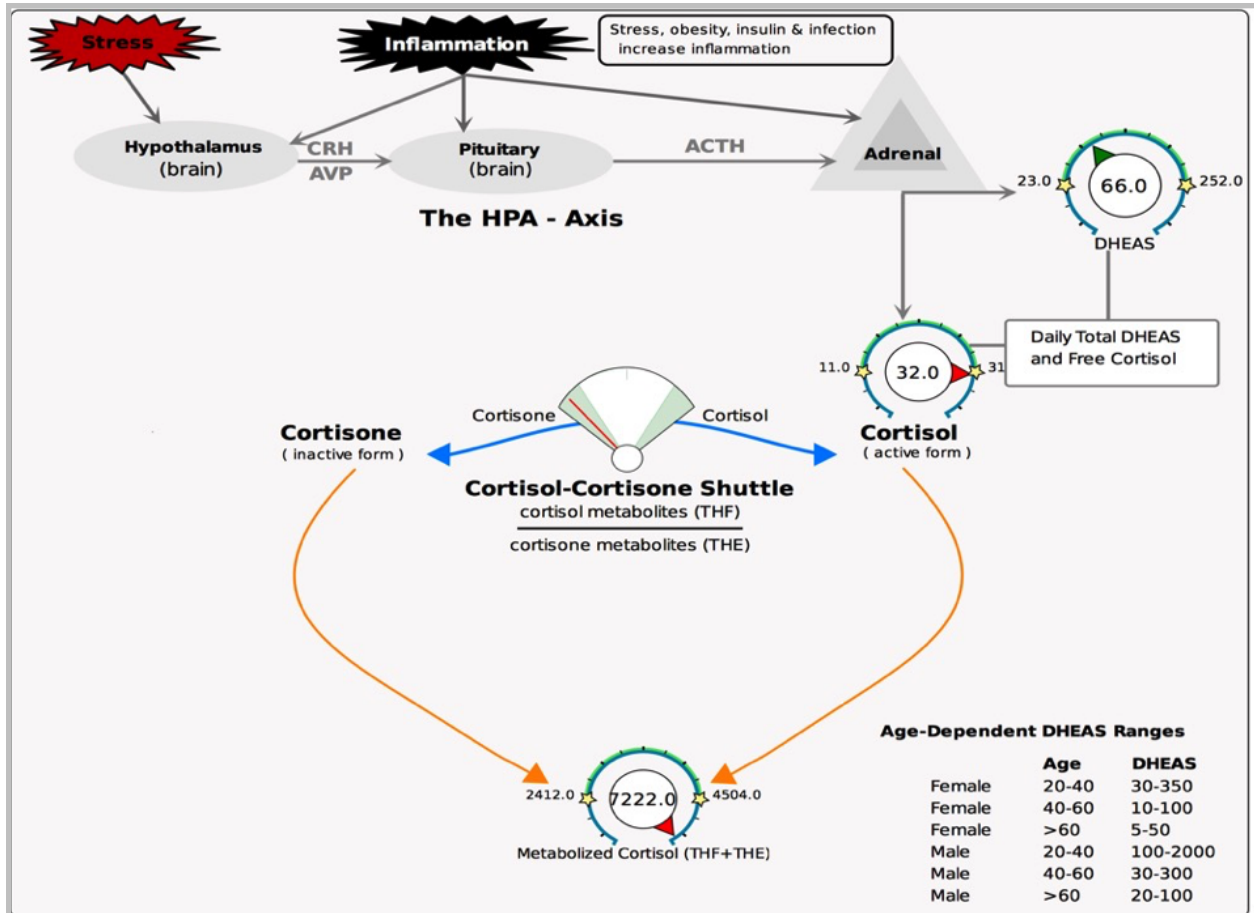
So, step one, her free cortisol is borderline high. It's a little elevated. Step two, the cortisol rhythm was normal at waking, high later in the morning, low in the afternoon, and normal at night. Number three, her free cortisone rhythm was high waking, high in the morning, low in the afternoon, and normal at night. Her total free cortisone was high, and this biases the cortisol finding upward slightly but matches pretty closely. Step four, her cortisol metabolites were normal. Step five, total DHEA was normal. Step six, cortisol-to-DHEA ratio was normal. Step seven, cortisol-to-cortisone ratio was normal. Step eight, melatonin was normal, albeit in the low end of the range.

The main reason that her cortisol is high is because of that morning reading, and this again could go either way. As with the last patient, it could be a non-pathological finding, especially with a normal total cortisol-to-DHEA ratio, so you really have to consider the full case and the other markers. Also, her melatonin is normal. If it were low, that would strengthen the case to treat. On the other hand, this patient has many signs and symptoms that are associated with HPA axis dysfunction, including disrupted sleep. Her waking cortisone was high, and cortisol was high-normal, which suggests that production may be a bit high overnight.

In this patient, we did decide to treat. I used HPA Axis Balance three times a day and Kavince at night and then also Acetyl-CH to reset her diurnal cortisol rhythm.

<b>Protocol for high free cortisol with energy issues &amp; brain involvement</b>	
<b>Intervention</b>	<b>Dosage/Comments</b>
<b>HPA Balance (Vital Plan)</b>	1 cap TID
<b>Kavince (Neuroscience)</b>	1-2 caps before bed
<b>Acetyl-CH (Apex Energetics)</b>	1 cap TID

Here is again, as a reminder, a protocol for high free cortisol with energy issues and brain involvement. HPA Balance: Those are adaptogens that help regulate the circadian rhythm. Particularly when cortisol is high is a good time to use that. Kavince, which is GABA and taurine, a major inhibitory neurotransmitter, helps with sleep duration and quality. Acetyl-CH is a blend of nutrients that supports cholinergic function and helps reset the circadian rhythm.



The next case is a 37-year-old female. Chief complaint was to manage her Hashimoto's thyroiditis and her "adrenal fatigue." Of course, a lot of patients will come in complaining of adrenal fatigue, and it's going to be your job to re-educate them about what that really means. So, as you can see, her adrenals are not fatigued at all. This is a classic example where patients think that their cortisol is low, and their adrenals are tired or fatigued, but it's actually pumping out lots of cortisol.

If we go through our algorithm, step one, free cortisol is high. Step two, the diurnal rhythm is high waking, in the morning, and normal in the afternoon and night. Free cortisone rhythm is high-normal waking, normal in the morning, afternoon, and night. Her total free cortisone was normal. Step four, cortisol metabolites were high, so this is a concordant pattern where both her free and

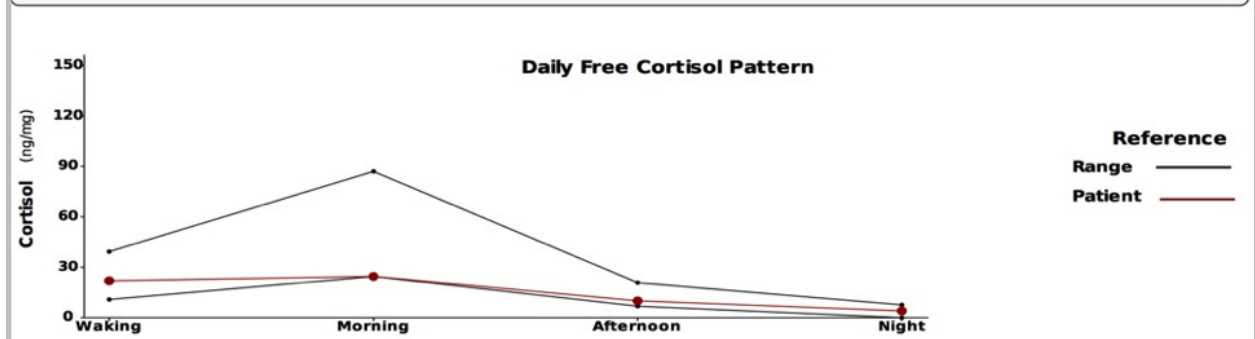
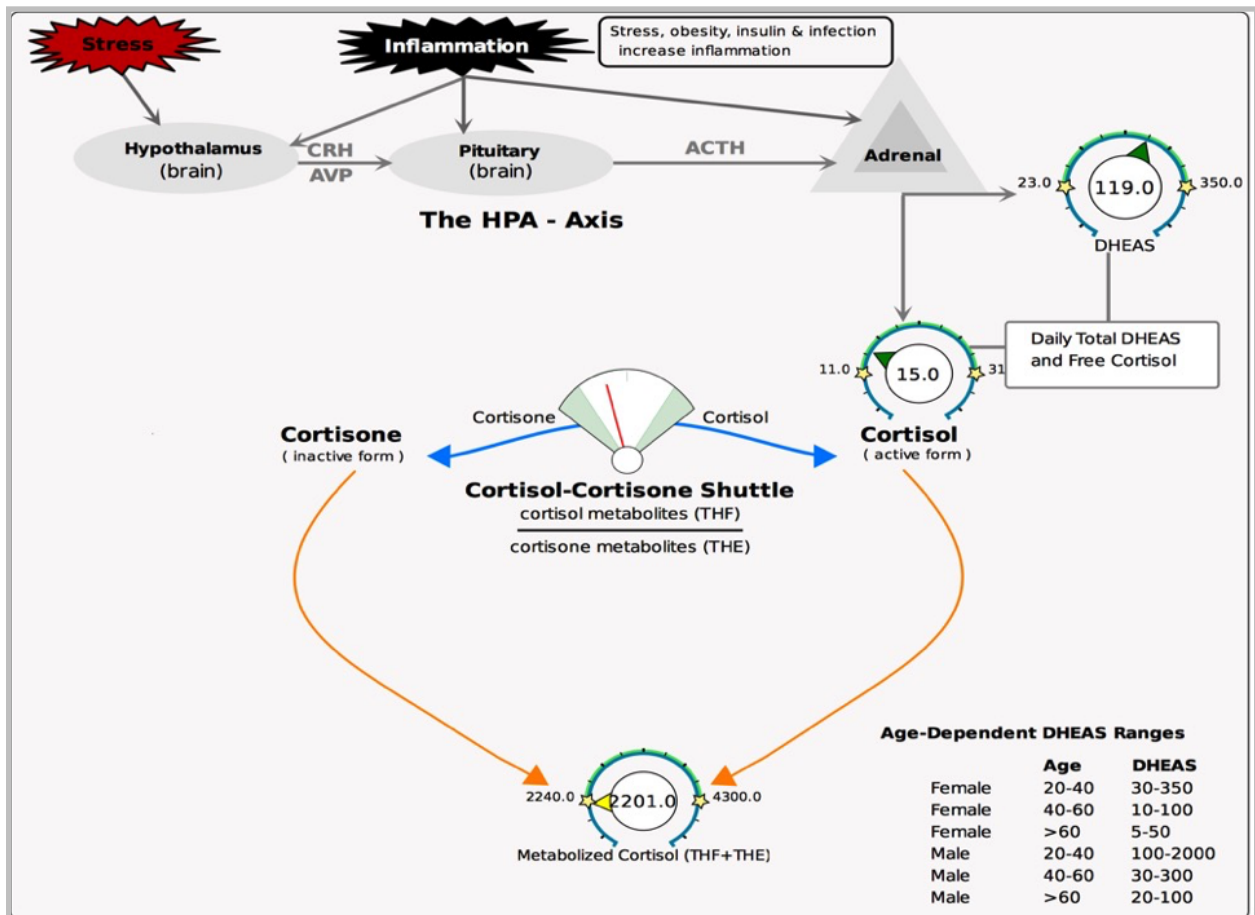
metabolized cortisol are high. Step five, her total DHEA was normal. Step six, her cortisol-to-DHEA ratio is a little high because of her cortisol being high and her DHEA being toward the low end of the range. Step seven, her cortisol-to-cortisone balance was favoring cortisone, and this is probably because the body is trying to protect itself against high cortisol by deactivating cortisol into cortisone. Step eight, her melatonin was really low, 2.7, and cortisol opposes melatonin, so with high cortisol we often do see low melatonin.

Now, this is an interesting case where the perception and why it's so important to use precise terminology such as HPA axis dysfunction rather than adrenal fatigue can really make a difference. If the patient thinks she has adrenal fatigue, and she is kind of run down, tired, and her adrenals can't produce cortisol, and she has this idea of kind of being drained, she may underestimate the need for stress management because she doesn't actually think of herself as being in a hyperactive stress response. When it's clear that the stress response system is on overdrive rather than being hypoactive, patients may be more likely to implement stress management changes. This is a situation where that was the case. When she saw that she had high cortisol rather than low cortisol, it really enabled her to take the behavioral and lifestyle part of the treatment more seriously.

For this treatment, it would be the high cortisol protocol for concordant free and metabolized high cortisol that we discussed in the last presentation, but this patient also has inflammation with Hashimoto's. She had a high CRP and interleukin-6. She has a high cortisol-to-DHEA ratio, so we would add the anti-inflammatory supplements in addition to an autoimmune Paleo diet. She would need significant circadian support due to very low melatonin and sleep disruption and maybe even some supplemental melatonin as well.

<b>Protocol for high cortisol with Hashimoto's</b>	
<b>Intervention</b>	<b>Dosage/Comments</b>
<b>HPA Balance (Vital Plan)</b>	1 cap TID
<b>Kavinace (Neuroscience)</b>	1-2 caps before bed
<b>Phosphatidylserine (Integrative Therapeutics)</b>	1 cap before bed
<b>Acetyl-CH (Apex Energetics)</b>	1 cap TID
<b>Melatonin (Now 1 mg 2-stage release)</b>	0.5 mg (cut tablet in half) 1 hour before bed
<b>5-HTP (Jarrow)</b>	50 mg 1 hour before bed
<b>Boswellia AKBA (Pure Encapsulations)</b>	1 cap OD or BID
<b>Longvida curcumin (Pro-Health)</b>	1 cap OD or BID

Okay, here's the protocol I used: HPA Balance, the adaptogens; Kavince to help with sleep and lower the cortisol at night. We would have used Seriphos. We discussed Seriphos earlier in the program, but as of a week ago, at the time of this recording, it had been discontinued, so now we are using phosphatidylserine from Integrative Therapeutics. There are a lot of different options here, but one capsule before bed. Acetyl-CH for additional brain and circadian rhythm support. 5-HTP is a melatonin precursor but also because this patient was depressed, so it can have an antidepressant function. Melatonin at 0.5 mg for sleep an hour before bed. Lower doses of melatonin, remember, can be more sedating than higher doses. Then we used boswellia AKBA and curcumin for inflammation. The patient was already taking extra-virgin cod liver oil and eating a fair amount of cold-water fatty fish.



Okay, the next patient. This is a 42-year-old transgender female-to-male patient, and chief complaint was to make sure thyroid and cortisol are in good shape and also estradiol and testosterone. Now this is a tricky case. If you're looking at sex hormones for a transgender patient, you need to look at both the male and female ranges and consider what the patient goals are. In this case, the patient was close to male hormone levels, which was his goal, but for this case study, we're just looking at cortisol levels.

If we go through the algorithm, number one, free cortisol was borderline low. Number two, diurnal rhythm was normal at waking but low morning, low-normal afternoon, and normal at night, but you can see it's a pretty flat curve. It's not really a curve. It's just kind of like a flatline, so it's a depressed rhythm. Number three, the free cortisone rhythm was similar, low-normal waking, low morning, low-normal afternoon, and normal at night. It's a pretty close match. The total free cortisone was low, so the cortisone findings kind of bias the cortisol downward further. Step four, cortisol metabolites were low. These were actually below the lab range, whereas the free cortisol was just low-normal, so that's concordant. Step five, total DHEA is normal. Step six, the cortisol-to-DHEA ratio is low, so this patient actually had more DHEA relative to cortisol. May not be able to mount an anti-inflammatory response because cortisol is an anti-inflammatory hormone. Then you have step seven, cortisol-to-cortisone ratio is normal, and step eight, melatonin is low.

So this is indicative of significant stress with hypocortisolism and blunted HPA axis response. If we tested this patient's cortisol awakening response, or CAR, it would almost certainly be reduced. This is a classic kind of "adrenal fatigue" case, but as we know, it's way more accurate to call it hypocortisolism because even though cortisol is low, and the patient fits the profile of adrenal fatigue, the cortisol is likely to be low for reasons other than insufficient adrenal production.

Intervention	Dosage/Comments
<b>Vital Adapt</b> (Natura Health Products)	2 caps TID
<b>Adrenal glandulars</b> (Dr. Ron's)	3 capsules in the morning with breakfast
<b>Acetyl-CH</b> (Apex Energetics)	1 cap TID
<b>5-HTP</b> (Jarrow)	50 mg one hour before bed
<b>Doc Parsley's Sleep Cocktail</b>	One packet one hour before bed

We would do a low cortisol protocol here, and it would look something like this. Vital Adapt from Natura. It's adaptogens that are good in low cortisol states. Adrenal glandulars, which can be helpful in both low and high cortisol states, but I tend to use them more frequently in low cortisol states. Acetyl-CH, 5-HTP, and then Doc Parsley's Sleep Cocktail.