

HPA-D 3-5 – Part 12

All right. Now, we're going to talk about putting all of this together into a protocol.

Pattern	Free cortisol	Metabolized cortisol
High cortisol	High or normal	High or normal
Low cortisol	Low or normal	Low or normal
Disrupted diurnal rhythm	High, normal, low	High, normal, low
High free, low total	High	Low-normal or low
Low free, high total	Low	High-normal or high
High DHEA	High, normal, low	High, normal, low
Low DHEA	High, normal, low	High, normal, low
High cortisol: cortisone ratio	High, normal, low	High, normal, low
Low cortisol: cortisone ratio	High, normal, low	High, normal, low
Low melatonin	High, normal, low (usually high, or high-normal)	High, normal, low
High melatonin	High, normal, low	High, normal, low

Here are the patterns again that you'll see in clinical practice. We went over all of these in the DUTCH Part 1 and Part 2 presentations. I've omitted a few from the list that we covered then and consolidated them into categories that receive similar treatment for the purpose of simplicity. I'm going to cover each of these in some detail on the slides that follow. As a reminder, no matter what the pattern is, the patient needs to address diet, lifestyle, and behavioral factors to balance the HPA axis, so don't skip right to the supplement protocols and gloss over that because you are not going to get good results. Having said that, in this protocol section, I'm just going to talk about supplements, botanicals, and hormones for these particular patterns, so I'm not repeating myself on every slide.

High cortisol protocol

Intervention	Dosage/Comments
HPA Balance (Vital Plan)	Contains Relora, Sensoril, L-theanine; take 1 cap BID or TID
Kavinace (Neuroscience)	Contains 4-amino-3-phenylbutyric acid and taurine; take 2 capsules before bed if sleep primary concern; or 1 cap TID for anxiety/stress
Phosphatidylserine	PS dose: 100-200 mg TID
Acetyl-CH (Apex Energetics), 5-HTP, melatonin	As needed if circadian rhythm/sleep/mood disrupted, melatonin is low (often is in high cortisol states)
Metabolic Synergy & GlucoSupreme (Designs for Health)	Only if blood sugar high; Metabolic Synergy dose 2 caps TID; GlucoSupreme 2 caps BID
Boswellia, curcumin & fish oil	Only if significant inflammation present
CBD	Optional. Use if anxiety severe, or other conditions present

Let's start with high cortisol. This is when either free or total cortisol is high, and the other is either normal or high, so it is a concordant pattern. The primary goal is to bring down the cortisol in this situation. Causes would include perceived stress, inflammation, circadian disruption, and Cushing's, and you want to make sure to explore the causes of inflammation such as gut issues or infection and to rule out Cushing's disease, which is unlikely, but it happens. In fact, just yesterday I had a patient who presented with very high cortisol levels, higher midnight cortisol levels than morning, and ended up having full-on Cushing's disease.

Okay, so the interventions would be HPA Balance, which contains Relora, sensoril, and l-theanine, to bring down cortisol; Kavinace, a form of GABA, to bring down cortisol; phosphatidylserine also brings down cortisol; Acetyl-CH if their circadian rhythm is disrupted, so if they have high cortisol, and their rhythm is out of whack, like it is lower in the morning and higher at night. Melatonin may be necessary or helpful or 5-HTP for increasing melatonin levels if their sleep is disturbed. Metabolic Synergy and GlucoSupreme only if their blood sugar is high. Boswellia, curcumin, and fish oil only if they have significant inflammation present, and then CBD can be used if their anxiety is severe or they have other conditions that indicate CBD.

Low cortisol protocol

Intervention	Dosage/Comments
Vital Adapt (Natura Health Products)	Contains Eleuthero, Rhodiola, Schisandra, Ashwagandha, Cordyceps, Reishi, Ginseng, Licorice
Adrenal glandulars (Dr. Ron's)	Optional; some patients with low cortisol do well with them. 3 capsules in the morning.
Licorice	Patients with very low cortisol may benefit from additional licorice; Vital Adapt contains 10 mg of glycyrrhizin per 2mL dose; patients with low cortisol can safely take up to 100 mg/d
Acetyl-CH, 5-HTP, melatonin, L-theanine	As needed if circadian rhythm/sleep/mood disrupted, melatonin is low
Boswellia, curcumin & fish oil	Only if significant inflammation present
CBD	Optional. Use if anxiety severe, or other conditions present

Okay, here is the low-cortisol protocol, low cortisol free and metabolized. This is associated with metabolic syndrome, fibromyalgia, chronic fatigue syndrome, chronic pain, cardiometabolic disease, mood disorders, autoimmune disease, cancer, Addison's, and corticosteroid or opioid use. We have Vital Adapt. This is a blend of adaptogens such as eleuthero, rhodiola, schisandra, ashwagandha, cordyceps, reishi, ginseng, and licorice. The dose of licorice in Vital Adapt is fairly small and unlikely to provoke hypertension except in the most sensitive patients, so keep that in mind. It can typically be used pretty safely. Adrenal glandulars are optional. Some patients with low cortisol do well with them, so the dose would be three capsules in the morning. Patients with low cortisol may benefit from additional licorice above and beyond what is in Vital Adapt. Vital Adapt contains about 10 mg of glycyrrhizin per 2 mL dose, so patients with low cortisol could safely take up to 100 mg of glycyrrhizin. Acetyl-CH, 5-HTP, melatonin, or l-theanine as needed if circadian rhythms, sleep, or mood is disrupted or melatonin is low. Then boswellia, curcumin, and fish oil if inflammation is present, and CBD is optional.

Disrupted diurnal rhythm (only)

Intervention	Dosage/Comments
Gaia Adrenal Support	Contains Rhodiola, Holy Basil, Ashwagandha, Oats Milky Seed, Schisandra
Acetyl-CH, 5-HTP, melatonin, L-theanine	As needed if circadian rhythm/sleep/mood disrupted, melatonin is low
Kavinace, Relora and/or PS	If cortisol is high at night
Metabolic Synergy & GlucoSupreme	Only if blood sugar high; Metabolic Synergy dose 2 caps TID; GlucoSupreme 2 caps BID
Boswellia, curcumin & fish oil	Only if significant inflammation present
CBD	Optional. Use if anxiety severe, or other conditions present

Here is a protocol for disrupted diurnal rhythm only, so if their total cortisol is normal, but their rhythm is flipped, such as they have high cortisol at night and low in the morning or just it's kind of haywire, what you can use here is Gaia Adrenal Support. It is a formula that contains rhodiola, holy basil, and ashwagandha. It is not as stimulating as Vital Adapt, so it can be useful in this situation. Again, Acetyl-CH to reset the circadian rhythm; HTP, melatonin, and l-theanine if sleep and mood are disrupted. Kavinace, Relora, and/or phosphatidylserine only at night if cortisol is high at night just to bring down the cortisol a little bit for nighttime. Metabolic Synergy, GlucoSupreme, boswellia, curcumin, fish oil, and CBD, just like the other protocols, are optional.

High free, low total cortisol

Intervention	Dosage/Comments
Acetyl-CH, 5-HTP, melatonin, L-theanine	As needed if circadian rhythm/sleep/mood disrupted, melatonin is low
Kavinace & Relora	Take at night before bed if cortisol is high at night and/or sleep is disrupted
Boswellia, curcumin & fish oil	Only if significant inflammation present

Here is the first discordant pattern: high free cortisol and low total cortisol. In these patterns, it is really even more important to focus on the underlying cause because that is the main issue causing this discordant cortisol presentation. Obviously, you kind of have like one foot on the accelerator and one foot on the brake here, so if you go in with things that will increase cortisol, that could actually drive free cortisol up higher while you're trying to raise the total cortisol. With the opposite pattern, you have the same challenge. With high free cortisol and low total cortisol, that can occur with hypothyroidism, inflammation, licorice supplementation, or it can be normal or nonpathological. When you see this, you want to ask the patient if he is taking licorice or has been taking it. If he is not, you want to further investigate thyroid function. You'll remember that some researchers are using cortisol metabolites and free cortisol to diagnose subclinical hypothyroidism or hyperthyroidism, so it might show up in the urine here before it even shows up in the blood work, but you want to check the thyroid carefully. Remember that this can be nonpathological if someone has relatively high cortisol in the early morning and lower the rest of the day because the metabolites lag free cortisol production.

I am somewhat reluctant to use adaptogens in this pattern. Anecdotally, what we have seen in clinical practice is that adaptogens tend to raise free cortisol without affecting the metabolites very much or may even decrease metabolites in some cases. I wouldn't use adaptogens in this pattern. I might focus on things such as Acetyl-CH to reset the rhythm; 5-HTP, melatonin, or L-theanine if needed for sleep or mood disruption; Kavinace and Relora maybe at night if free cortisol is high at night and sleep is disturbed, although I wouldn't take too much of that for fear of lowering cortisol further; and then boswellia, curcumin, and fish oil for inflammation.

Low free, high total cortisol

Intervention	Dosage/Comments
HPA Balance	Contains Relora, Sensoril, L-theanine; take 1 cap BID or TID
Vital Adapt?	Contains Eleuthero, Rhodiola, Schisandra, Ashwagandha, Cordyceps, Reishi, Ginseng, Licorice
Kavinace	Contains 4-amino-3-phenylbutyric acid and taurine; take 2 capsules before bed if sleep primary concern; or 1 cap TID for anxiety/stress
Phosphatidylserine	PS dose: 100-200 mg TID
Acetyl-CH, 5-HTP, melatonin	As needed if circadian rhythm/sleep/mood disrupted, melatonin is low (often is in high cortisol states)
Metabolic Synergy & GlucoSupreme	Only if blood sugar high; Metabolic Synergy dose 2 caps TID; GlucoSupreme 2 caps BID
Boswellia, curcumin & fish oil	Only if significant inflammation present

Here is the opposite pattern: low free cortisol and high total cortisol. This occurs in obesity, insulin resistance, hyperthyroidism, chronic stress, glucocorticoid use, and chronic fatigue syndrome. Again, you really have to focus on the underlying cause. This is often obesity and insulin resistance. Hyperthyroidism is pretty rare, but if the patient is not obese, and he presents with this pattern, it is almost always a chronic stress response. If that is the case, using adaptogens in this case may be warranted and possible. As I said, just anecdotally, adaptogens seem to increase free cortisol without substantially increasing total cortisol, but you want to retest perhaps more quickly than you would otherwise to make sure that you are not driving their total cortisol up [that's why I've put a question mark next to Vital Adapt]. You could use either HPA Balance or Vital Adapt, Kavinace, phosphatidylserine, Acetyl-CH to reset the rhythm, and then Metabolic Synergy or GlucoSupreme for blood sugar issues, or boswellia, curcumin, and fish oil if inflammation is present.

High DHEA

Intervention	Dosage/Comments
HPA Balance	Contains Relora, Sensoril, L-theanine; take 1 cap BID or TID
Vital Adapt	Contains Eleuthero, Rhodiola, Schisandra, Ashwagandha, Cordyceps, Reishi, Ginseng, Licorice
Kavinace or other circadian nutrients	If sleep or circadian rhythm is disrupted
Metabolic Synergy & GlucoSupreme	Only if blood sugar high; Metabolic Synergy dose 2 caps TID; GlucoSupreme 2 caps BID
Boswellia, curcumin & fish oil	Only if significant inflammation present

Okay, high DHEA. Primary causes are PCOS, acute stress, obesity, benzodiazepine use, antidepressants, and ADD medications. If DHEA is high in the context of any other patterns we already discussed, just treat according to that pattern, but if cortisol is entirely normal and DHEA is high, which is pretty rare in my experience, you can consider this protocol here. The first thing to think about is, if you're using the DUTCH Comprehensive, is total DHEA high, or is it just DHEA sulfate? When you see elevated DHEA sulfate and other markers are normal, it is probably not even pathological, and it doesn't require treatment. If DHEA sulfate is significantly elevated and total DHEA is normal, the possible causes could be things that upregulate sulfation such as a high-protein diet, liver detoxification supplements and herbs, or methylation supplements. If total DHEA, which is a combination of DHEA sulfate, etiocholanolone, and androsterone are high, it could be related to obesity, stress, or PCOS. You want to address obesity and PCOS, and then you can use adaptogens and HPA Balance for stress.

Low DHEA

Intervention	Dosage/Comments
HPA Balance	Contains Relora, Sensoril, L-theanine; take 1 cap BID or TID
Vital Adapt	Contains Eleuthero, Rhodiola, Schisandra, Ashwagandha, Cordyceps, Reishi, Ginseng, Licorice
Kavinace or other circadian nutrients	If sleep or circadian rhythm is disrupted
Metabolic Synergy & GlucoSupreme	Only if blood sugar high; Metabolic Synergy dose 2 caps TID; GlucoSupreme 2 caps BID
Boswellia, curcumin & fish oil	Only if significant inflammation present

Similar process if DHEA is low. You first think about whether total DHEA is low or just DHEA sulfate. If it is low DHEA sulfate with normal total DHEA, that is often caused by inflammation or glucocorticoid use. Remember the IBD patient who we discussed who had normal DHEA but low DHEA sulfate, and he was taking Cortex and also had a lot of inflammation? If total DHEA is low, stress, aging, rapid weight loss, opioids, glucocorticoids, birth control or HRT, antipsychotics, or diabetes medications could be to blame, so you want to address those underlying causes. You can also use adaptogens and other supplements as necessary to address the stress response, things such as HPA Balance, Vital Adapt, Kavinace and other circadian nutrients, and then Metabolic Synergy, boswellia, etc., as needed if inflammation or blood sugar issues are present.

As you can see here, the protocol for low DHEA is the same as high DHEA. Remember that adaptogens have a balancing effect, and cortisol is not low or high here. If it is, you should use the other patterns that we discussed previously, so that is not as much of a concern.