

HPA-D Treatment - Part 4

There is a vast amount of research now on specific stress management practices, so I'm going to talk about a few of them and just go over a little bit of that research to give you an idea, starting with mindfulness meditation.

Several trials have found meditation to be effective at reducing the symptoms of anxiety and depression, even compared with active controls such as relaxation techniques. For references here, you can see my "Five Reasons to Start Meditating" article that we'll provide a link to in the resources.

Several studies have also supported meditation as an effective treatment for insomnia. For example, one randomized controlled trial of 30 adults with chronic insomnia even found that an eight-week mindfulness meditation program was as effective at improving sleep as taking Lunesta, which is one of the newer sleep medications at the time of this recording. Other studies have even shown that meditation can reduce the risk of a future heart attack, even in very high-risk populations such as middle-aged African-American men who have already had a heart attack, and it can reduce that risk as much or more than statin drugs.

There are tons of free resources online for getting started with meditation. Lifehacker has some helpful information, and the UCLA Mindful Awareness Research Center has a free meditation podcast with guided weekly meditations. I also like the mindfulness-based stress reduction program that was put together by Jon Kabat-Zinn of the University of Massachusetts Center for Stress Reduction, and some people have found apps that you can download on iOS and Android, such as Headspace, to be helpful. Once again, start small and don't overcommit, but be as consistent as possible.

Yoga has been studied since the 1960s and 1970s, and it has consistently been shown to reduce stress, lower cortisol, and regulate the HPA axis in a variety of different populations such as urban youth, women with post-traumatic stress disorder, veterans, and athletes. It has also been shown to improve glycemic control in type 2 diabetics and reduce inflammation in patients with inflammatory bowel disease and obesity and in breast cancer survivors.

Yoga classes are ubiquitous now. There are yoga studios available in most communities and hundreds of studios in larger cities. You can also find yoga videos online. I like, again, mindfulness-based stress reduction as an option that combines yoga and mindfulness training. It is offered as an eight-week course in many parts of the U.S., often at hospitals, and there is a lot of research behind it showing that it's very effective for managing stress and reducing pain.

Tai chi has been shown to reduce stress and cortisol levels, attenuate stress hyperreactivity, and improve several measures of health and well-being. It is possible to learn tai chi to some extent from a video, but finding a local class is a much better option.

Qigong is another practice that has been shown to be beneficial. The word “qigong” is made up of two Chinese words. Qi is spelled “qi.” It’s pronounced “chee,” and it’s usually translated to mean “the life force or vital energy that flows through all things in the universe.” The second word, “gong,” means “accomplishment or skill that is cultivated through steady practice.” So together, “qigong” means “cultivating energy,” essentially. It’s a system practiced for health maintenance, healing, and increased vitality. It’s used in martial arts practice, particularly internal martial arts, but if you’ve ever traveled in China or other Asian countries, you have probably also seen just average people and elderly people standing outside at the park practicing qigong and tai chi.

Qigong has been shown to decrease cortisol; improve mood; relieve depression and anxiety; reduce stress perception, which is key, as we’ve discussed; improve quality of life; help cancer patients undergoing chemotherapy to tolerate the treatment; lower blood pressure; and reduce inflammatory cytokine production. It’s great to take a class if one is available locally, but you can also learn simple routines via video, and I teach a simple routine myself in my 14Four program.

Biofeedback is a mind-body technique that helps teach patients how to influence their autonomic nervous system, which is the part of the body that controls involuntary physical function such as blood pressure, heart rate, muscle tension, and brainwave frequency. There is less research on biofeedback available, but one study examined it for stress management in the daily hassles of life and found significantly lower cortisol levels in the intervention group along with better scores on psychological stress inventories.

Another study found that using biofeedback during stressful video games improved the effectiveness of stress management in soldiers. The most practical way of learning biofeedback is probably one of the iOS or Android apps that are available. HeartMath is one of the most popular apps, so you can just Google that and learn more about it.

Okay, so let’s move into the next category now, which is controlling light exposure. Circadian disruption is one of the four key drivers of HPA-D, so this is another crucial area. There are two primary issues to consider: too much exposure to light at night and not enough exposure to light during the day. Both natural and artificial light can have a significant impact on your circadian rhythm, so do not underestimate the impact that these changes can have for yourself or for your patients. I’ve seen patients with intractable insomnia who didn’t even respond to medication improve or resolve completely by making these changes alone. We’ve covered this in the exposome unit in some detail, as well as in my book, so I’m just going to summarize the recommendations here.

Avoid or minimize using computers and tablets within two to three hours of bedtime. If you need to use your computer closer to bedtime, consider using software such as f.lux to minimize the sleep-disrupting effect. Also, very recently, Apple introduced a new feature called Night Shift in iOS 9 that automatically dims the screen on any device that is running iOS such as a phone or a tablet after the sun goes down, and it reduces the amount of blue light that that device emits. So, I imagine that Android devices may have a similar feature already or soon if they don’t already.

Major companies have now recognized the importance of this, and they're building these kinds of features into operating systems of these devices.

Orange-tinted glasses are another way to block out the spectrum of blue light that suppresses melatonin. Studies have shown that they may improve sleep quality and mood and are especially important if you're using electronic media such as smartphones and even television in the evening. They can be purchased on Amazon and elsewhere. There are several brands. There are cheap ones that are less than \$15. There are the BluBlocker Viper wraparounds, which are about \$30, that work very well and block out over 99 percent of blue light and are quite affordable. Then there are the Gunnar gaming glasses, which range from \$60 to \$100 and are much more sophisticated and higher quality. They have different frame selections and different types of lenses, some of which are clear and just reduce eyestrain. Others have an amber tint that don't knock out 100 percent of blue light but maybe something more like 50 percent.

You also want to dim, cover, or remove anything in your bedroom that emits light, such as an alarm clock. For example, when I travel and stay in a hotel, they often have digital alarm clocks with very bright LED readouts. I just take a towel from the bathroom and throw it over the alarm clock or even unplug it, since I rarely use it. Consider using blackout shades to make your bedroom as dark as possible, along the same lines, or use an eye mask when you sleep to block out any light that you can't dim coming into your room.

Increase your exposure to light in the morning and during the day. At least 15 minutes of outdoor exposure to light is required for optimal circadian rhythm production, and preferably 30 minutes would be better. Try exposing yourself to bright light first thing in the morning, especially if you're having sleep difficulties. If it's light outside when you wake up, you can try going outside without sunglasses for a 15- to 30-minute walk.

If you live in the far northern latitude or where it's dark in the morning when you wake up, you could consider buying a light machine that emits 10,000 lux of light and sit in front of it for 15 to 20 minutes. These machines have been studied for treating seasonal affective disorder. You can find them on Amazon, and I'll include a recommendation in the resources for this section.

If your patient does shift work, if at all possible, advise them to avoid rotating shifts, so working the night shift two or three times a week and then the day shift two or three times a week. It's almost impossible for the body to adjust to alternating shift work, and it's been shown to be significantly more harmful than consistent shifts where the person works the night shift four or five days in a row. If your patient works a regular night shift, advise as regular of a routine around that as possible. They can wear the orange glasses when they get home from work and use blackout shades in the room to make it dark while they're sleeping. Regular mealtimes can also help to entrain the circadian clock in those situations.

If your patient travels frequently across time zones, either as flight staff or as an executive, here are some tips. A few days before the trip, start taking a low dose such as maybe 250 mcg up to 1 mg of melatonin at the time they will go to bed at their new destination. For example, when I was

going to the U.K., which was eight hours ahead of Pacific time at that point, I started taking melatonin at 2 p.m. a few days ahead of my trip. Another thing they can do is shift their mealtimes to what they would be at the destination, though this can be a little bit difficult because it might mean that you're eating a meal in the middle of the night in your current location, and I wouldn't advise waking up to do that. When you arrive at the destination, try to get on a normal schedule there as soon as possible.

Unfortunately, in the case of both jet lag and shift work, you're just really kind of mitigating harm here because both are associated with significantly higher morbidity and mortality. It's not easy for people to change their career, and they don't always want to, but if they're suffering from severe health problems, it is worth explaining to them the effects that circadian disruption has on the HPA axis and their overall health. You might at least float the possibility of changing careers if they are really serious about improving their health.