



PATIENT HANDBOOK



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Stress Recovery

Welcome to the SOS Stress Recovery Program. This guidebook was designed to help you bring your mind and body back into balance and eliminate the unhealthy effects of stress.

Each person's response to stress is unique and complex. The essential tools in this program are designed to be flexible as they help support each component of the stress response, allowing you to find the perfect balance that restores your vitality and optimal health.

This guide will help you better understand how stress affects your health on a daily basis; including why your body responds, or fails to respond, to the stressful events in your life. Starting with the "Life Event Stress Inventory," you will discover the life events that may be the most stressful. Additionally, each chapter outlines recommendations for the four major factors that trigger a stress response in the body: *mental and emotional stress, blood sugar imbalances, insomnia and inflammation*.

Once you understand these basic principles, you will have the tools to control your stress response, rather than be controlled by the events and circumstances around you.



Your Body's Stress-Buffering Mechanisms

Under normal, healthy conditions, cortisol is released in response to stress and DHEA acts to counter-balance cortisol. Prolonged stress can overwhelm the HPA axis, burdening the adrenal glands and creating an imbalance in cortisol and DHEA ratios.

As the body's "stress hormone," cortisol provides the body with quick bursts of energy and has additional benefits such as reducing inflammation. DHEA is your body's anti-cortisol hormone. Without DHEA, long-term elevated cortisol levels would wreak havoc on the body. As a stress-buffering mechanism, DHEA directly binds to receptors in the brain that promote a sense of relaxation and decreased pain. DHEA also supports insulin sensitivity, maintains tissue strength and repair, boosts immune function and promotes a sense of well-being.

It is important that cortisol and DHEA levels remain in proper ratios in order to maintain the optimal balance that is required by the body.

Additional stress-buffering mechanisms include the brain chemicals (neurotransmitters) serotonin and gamma-amino butyric acid (GABA). Serotonin and GABA are chemicals that, once released from nerve cells, create a sense of positive mood and relaxation. Serotonin and GABA are important counterparts to the fight-or-flight chemicals- epinephrine and norepinephrine. Epinephrine and norepinephrine put the body in overdrive, to heighten awareness and sharpen your reflexes so you remain awake, alert and responsive. Maintaining healthy serotonin and GABA levels can help the brain put the brakes on your stress response so you can remain calm under pressure. More information regarding natural methods to boost your serotonin and GABA levels is included in Chapters 2 and 3.



Four Key Stressors of the Human Body

Assessing your HPA function may help you and your health care provider determine the specific actions you need to take to improve your health. A crucial step is to determine which and/or how many stressors are affecting you. Understanding the "root cause" will restore balance to your stress response system and will significantly improve your overall health.

When most people think of "stress" they usually limit their definition to mental and emotional stressors. Going through a divorce or changing jobs can send your stress (and cortisol) levels soaring. However, blood sugar imbalances, inflammation and inadequate sleep are also potent stimulators of cortisol production within the HPA axis. For example, you may have a low level of anxiety in your life, or you may be getting enough sleep each night, but if you are consuming a diet high in sugar, your cortisol, as well as insulin, levels will be on a continuous roller coaster ride.

Another example would be someone who eats a balanced diet, has a low level of anxiety, but has a high degree of inflammation in his or her body. That inflammation is sending signals to the HPA axis to secrete the cortisol needed to put out the inflammatory fire.

The specific driver of HPA axis activation may vary from individual to individual. However, the bottom line is, if the HPA axis is required to work over-time, cortisol and DHEA levels will eventually become imbalanced, along with other systems in your body.

The questionnaire included on the following page is designed to help you determine the root cause of HPA axis dysfunction. *Please take a few minutes to complete the **4 Key Stressors Questionnaire** to help you and your health care provider identify key stress response triggers in your body.*

After identifying your top stressor or stressors, you may want to focus on one component, such as regulating your blood sugar levels through diet and lifestyle changes and nutrient therapy (**Chapter 1: Blood Sugar Control**), supporting your mental and emotional health (**Chapter 2: Mental and Emotional Stress**), improving your sleep cycle (**Chapter 3: Overcoming Insomnia**), or reducing your body's inflammatory burden (**Chapter 4: Reducing Inflammation**).

- Do you frequently experience anxiety?
- Do you suffer from depression?
- Do you suffer from mood swings?
- Do you have difficulty getting motivated?
- Do you frequently experience feelings of agitation, anger, fear or worry?
- Do you frequently experience racing thoughts?
- Do you suffer from an addictive disorder?
- Do you find little joy in activities you once found pleasurable?

Chapter 2: Mental and Emotional Stress

When asked, most people can easily identify daily circumstances or causes of stress (finances, coworkers, relatives, etc.). But stress is not always a black-and-white issue of cause and effect. It is actually your perception of an event that plays a major role in whether a stressor will trigger a fight-or-flight response.

Some life events are universally painful and stressful, such as the death of a loved one. Many of the events on the **Life Event Stress Inventory** simply cannot be avoided. However, many of the daily stressors you encounter can be controlled. This depends greatly on your individual *perception* of the particular stressor.

For example, some people may find it extremely stressful to speak in front of an audience, while others find it enjoyable and look forward to it. This same potential stressor can evoke a drastically different response, depending on each individual's perception of public speaking.

It is important to remember your perception of an event is what creates stress—often more than the event itself. After all, what you may perceive to be a stressful experience might be someone else's adventure: skydiving, starting a new job or meeting new people at a cocktail party.



Sleep deprivation can quickly result in an overproduction of cortisol and adrenaline (epinephrine), causing a vicious cycle of stress, anxiety, blood sugar fluctuations, and increased heart rate and blood pressure. Maintaining a healthy sleep cycle and getting an optimal amount of sleep each night (seven to nine hours) is imperative for staying healthy and improving your stress-coping mechanisms.

Improving the Sleep Cycle

When it comes to improving your sleep cycle, it is important to closely examine lifestyle habits that disrupt your body's natural sleep-promoting mechanisms. This will help ensure optimal sleep cycle regulation.

To promote a better sleep cycle and support the body's natural circadian pattern, it is important to maintain a *consistent* sleep schedule, even on the weekends. According to the National Sleep Foundation, you should plan to get seven to nine hours of sleep each night, aiming for a bedtime before 10 p.m., or earlier (if you are tired). The 10 p.m. sleep time is ideal as it aligns well with the body's natural circadian rhythm and assists HPA axis recovery. This supports healthy energy levels throughout the day, as well as helps you to remain calm and maintain mental alertness and focus.

In order to help your body reestablish its natural circadian rhythm, it is critical to expose your body to the natural day and night cycle, meaning early morning light exposure immediately upon awakening and at least 30 minutes of sunlight during the day. Your retina, located at the back of the eye, contains photoreceptors that detect changes in daylight. As the sun goes down and you are exposed to more darkness, the photoreceptor cells send signals to your brain that start preparing your body for sleep. These signals regulate body temperature as well as the release of hormones and chemicals that regulate the sleep-wake cycle. Upon the onset of darkness, a gland in the brain called the pineal gland begins to release melatonin, triggering sleepiness. The progressive decrease of sunlight throughout the day is the body's natural trigger for melatonin excretion. Turning the lights off, or using very dim lighting, two to three hours prior to bedtime will help trigger melatonin release in the brain.



Stress and Thyroid Health

The hypothalamic-pituitary-axis (HPA) is the body’s stress response system, the activation of your body’s fight-or-flight-response to help you quickly and efficiently respond to danger. Short-term activation of the HPA axis is a normal part of life. However, our bodies are not designed to withstand chronic activation of the HPA axis. As outlined in this handbook, long-term stress can cause a breakdown of both mental and physical health, including the inhibition of normal thyroid function.

Maintaining a healthy thyroid is crucial to overall health, as thyroid hormones can affect virtually all bodily functions. The HPA and hypothalamic-pituitary-thyroid (HPT) axis are intimately connected. High levels of cortisol, secondary to chronic stress, can cause the thyroid to slow down over time, resulting in less thyroid hormone production. When the body experiences too much stress, thyroid hormone production and metabolic rate decrease. This is the body’s way of protecting itself from further breakdown—similar to pumping the brakes on a car speeding downhill. However, if elevated cortisol levels and low thyroid function are left unchecked, it can lead to a worsening of symptoms, including weight gain, fatigue, depression, hormone imbalances and menstrual cycle irregularities.

HPA axis and thyroid hormone imbalances often overlap, so it becomes even more important to thoroughly test both stress hormone (cortisol and DHEA) and thyroid hormone levels to see if one or both of these systems are not functioning properly. A disruption in one axis can affect the other system, which is why patients treated with thyroid hormone replacement therapy may feel their symptoms have not completely resolved. This may be due to an underlying dysfunction in the HPA axis affecting normal thyroid hormone production.

Common Symptoms Overlap Between HPA and HPT Axis Dysfunction

HPA Axis Dysfunction	HPT Axis Dysfunction
Fatigue	Difficulty losing weight
Depression	Low energy
Pain/inflammation	Pain
Disturbed sleep	Constipation
Hair loss	Hair loss
Poor memory/concentration	Mood, memory problems
Menstrual cycle irregularities	Menstrual cycle irregularities
Heart palpitations	Course, dry hair
Irritability	Puffiness around eyes/face



† These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.