SOS

STRESS RECOVERY PROGRAM

PATIENT HANDBOOK

Introduction

Stress: Everyone experiences it at one time or another, but chronic high stress, and how that stress is perceived, can be detrimental to your physical and mental health. It can instigate feelings of anxiety and overwhelming fear. It can also weaken your immune system and overall health, leaving you susceptible to colds and flu, an increase in aches and pains, as well as many serious illnesses. Everyone's stress threshold is different, as are his or her reactions to it. Some people thrive on stress and find it positively motivating; others do not.

Outside of mental stress, additional burden can be placed on the body's stress-response system by various lifestyle factors such as consuming a refined and nutrient-depleted diet, excessive amounts caffeine or alcohol, inflammation, or not getting enough sleep.

Your health care provider has recommended the SOS Stress Recovery Program as the strategies contained will assist you in learning how to appropriately respond to stress. These tools can help you regain control of your life, allowing you to enjoy a restored, renewed and revitalized life of balance.

Stress reveals itself in many different ways. How is it affecting your life?

Are you easily overwhelmed by everyday tasks that were once a breeze?

Do you get angry over things that never used to bother you?

Are you experiencing mental fatigue or brain fog?

Have you gained weight around your mid-section?

Do you have difficulty falling or staying asleep?

Are you having trouble concentrating?

Do you crave foods you know are unhealthy for you?

Is your libido not what it once was?

Are you easily irritated on a consistent basis?

Are you restless and agitated?

Do you lack energy by the middle of the afternoon?

Are you relying on caffeine to make it through the day?

Are you drinking alcohol in order to relieve stress?

Do you have aches and pains that you never had before?

If you identify with one to two of these statements, your body's ability to adapt to stress may be impaired. If you identify with three to four of these statements, your daily stress load may be overwhelming and significantly impacting your health.

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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.

Life Stress Inventory

Life Event	Points	Score
Death of a spouse	100	
Divorce	73	
Marital separation	65	
Detention in a jail or institution	63	
Death of a close family member	63	
Major personal injury or illness	53	
Marriage	50	
Being fired from work	47	
Marital reconciliation	45	
Retirement from work	45	
Major change in the health or behavior of a family member	44	
Pregnancy	40	
Sexual difficulties	39	
Gaining a new family member (birth, adoption, older adult moving in, etc.)	39	
Major business adjustment	39	
Major change in financial situation (a lot worse or better off than usual)	38	
Death of a close friend	37	
Changing to a different line of work	36	
Major change in # of arguments w/spouse on core issues	35	
Taking on a mortgage (for house, business, etc.)	31	
Foreclosure on a mortgage or loan	30	
Major change in responsibilities at work (promotion, demotion, etc.)	29	
Son or daughter leaving home (marriage, attending college, joined military)	29	
Conflict or tensions with parents/in-laws	29	
Outstanding personal achievement	28	
Spouse beginning or ceasing work outside of the home	26	
Beginning or completing formal schooling	26	
Major change in living conditions (new home remodeling, deterioration of home)	25	
Change of personal habits (dress, quitting smoking, etc)	24	
Conflict at work with employer or manager	23	
Major changes in working hours or conditions	20	
Changes in residence	20	
Changing to a new school	20	
Major change in usual type and/or amount of recreation	19	
Major change in church activity (a lot more or less than usual)	19	
Major change in social activities (clubs, movies, vising, etc.)	18	
Taking on a loan (car, TV, freezer, etc.)	17	
Major change in sleeping habits (a lot more or less than usual)	16	
Major change in number of family get-togethers	15	
Major change in eating habits	15	
Vacation	13	
Major holidays	12	
Minor violations of the law	11	

Take the Test

Use the Life Event Stress Inventory to calculate how events in your life influence the amount of stress you experience. You might be surprised to find how many stress-contributing events are part of your life. Add up all your points to findyour score.

A score of 150 points or less suggests a low amount of life change and a low susceptibility to stress-induced health breakdown.

Scores between 150 to 300 points imply about a 50 percent chance of a major health breakdown in the next two years.

A score of 300 points or more raises the odds of a major health breakdown in the next two years by about 80 percent.

Note : Risk of illness assessment. Adapted from "The Social Readjustment Scale," by T.H. Holmes and R.H. Rahe, 1967, *Journal of Psychosomatic Research, 2,* p.213. Copyright 1967 by Elsevier Science Inc.

Stress and Your Health

Your body was designed to respond to short bursts of stress, followed by long periods of rest and relaxation. In today's world, however, time to relax is considered a luxury, while stress levels are at an all-time high.

Stress is frequently referred to as "the silent killer"; it is a factor in five out of the six leading causes of death—heart disease, cancer, stroke, lower respiratory disease, and accidents. An estimated 75 to 90 percent of all doctor visits are for stress-related issues.

Initiation of the stress response begins within the brain and activates release of a series of hormones. The stress response system includes the hypothalamic-pituitary-adrenal (HPA) axis and the sympathetic nervous system (SNS). The HPA axis and the SNS regulate your body's fight-or-flight response, which is important for preparing the body to quickly respond to immediate danger, such as avoiding a car accident. The result of HPA and SNS activation is a heightened sense of awareness, an accelerated heart rate and rapid breathing. These normal responses to immediate danger help you quickly and appropriately respond to a potential threat.

Cortisol is the primary hormone involved in regulating the stress response. In response to stress, the adrenal glands secrete cortisol, along with the fight-or-flight hormone epinephrine (also known as adrenaline). These hormones travel through the bloodstream preparing the body for a quick response to potential danger. In addition to heightened awareness, you will experience an increase in blood sugar and blood pressure, as well as decreased immune defense, decreased digestion and a breakdown in muscle. Once the stressor is removed, this state of "sympathetic nervous system dominance" will subside and your body will return to a normal relaxed state.

The short-term release of cortisol and adrenaline into the bloodstream prepares the body for an essential and quick response to potential danger. Chronic stress causes a continuous release of cortisol and adrenaline into the bloodstream, which can be damaging to the body if left unresolved. Stress can also affect the thyroid gland, causing a disruption in the normal production of thyroid hormones *(See the "Stress and Thyroid" section of this handbook for additional information).*

The HPA axis coordinates stress response in the following process:

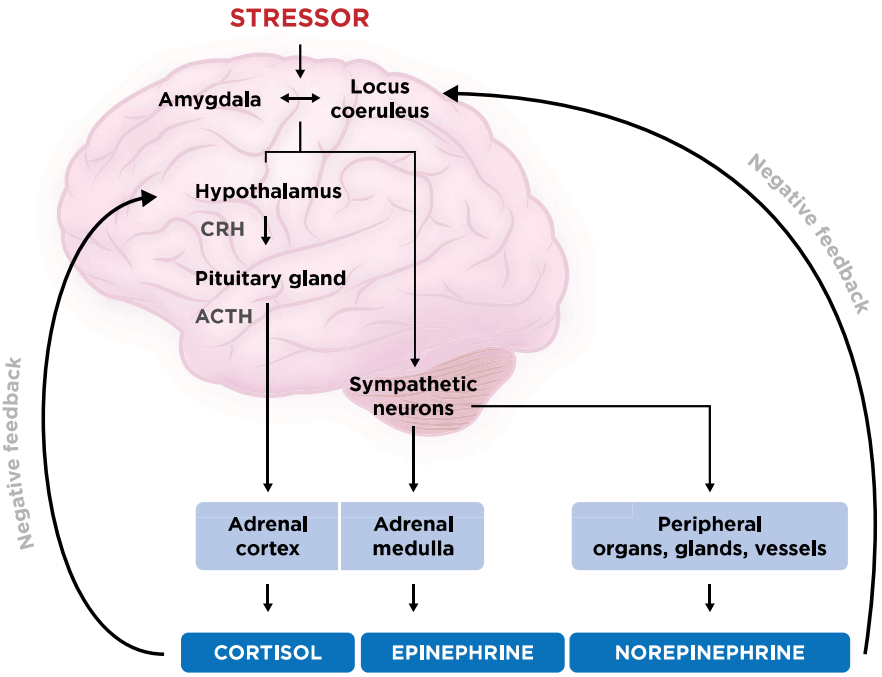
1. The brain receives a signal in order to indicate to the rest of the body that a stressor is present. (The stressor may be, mental or emotional stress, drop in blood sugar, insomnia or inflammation).

2. Stress activates the hypothalamus (a gland in the brain) which begins the stress-response process by secreting corticotropin-releasing hormone (CRH).

3. CRH stimulates the pituitary gland in the brain to release adrenocorticotropic hormone (ACTH) which travels through the blood stream until it reaches the adrenal glands.

4. ACTH causes the adrenal glands to release cortisol, resulting in: heightened awareness, increased blood sugar, rapid pulse and increased blood pressure, decreased immune defenses, decreased digestion, breakdown of bone to release calcium, and breakdown in muscle.

5. As part of the sympathetic nervous system (sympathetic neurons) response, the adrenal glands also release epinephrine (adrenaline), resulting in increased heart rate, rapid breathing, and a state of exaggerated fear and/or anxiety.



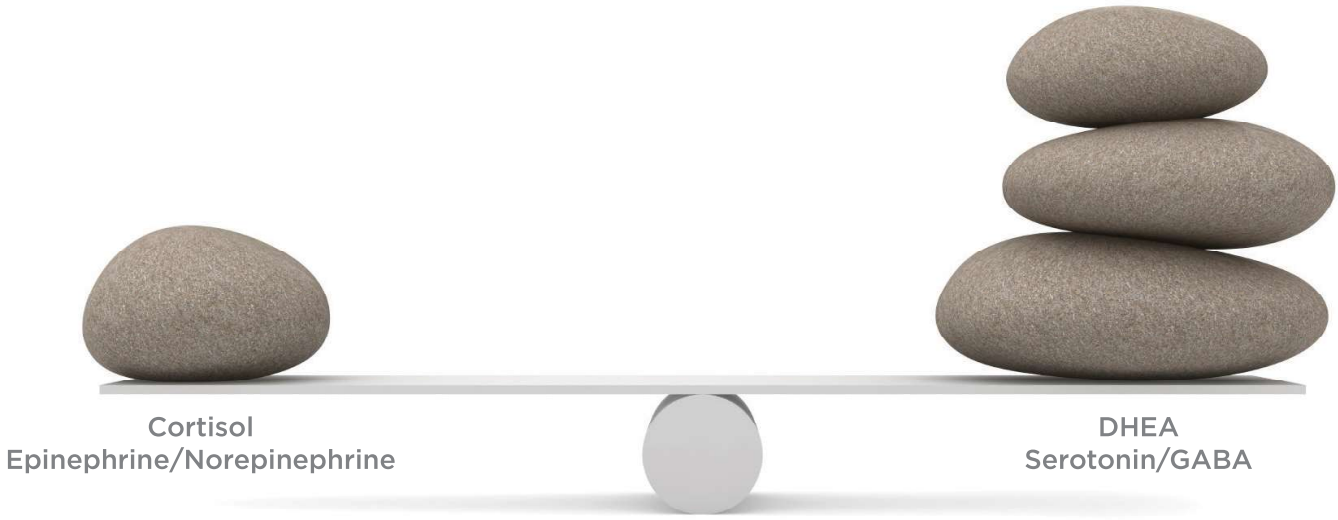
Your Body's Stress-Buffering Mechanisms

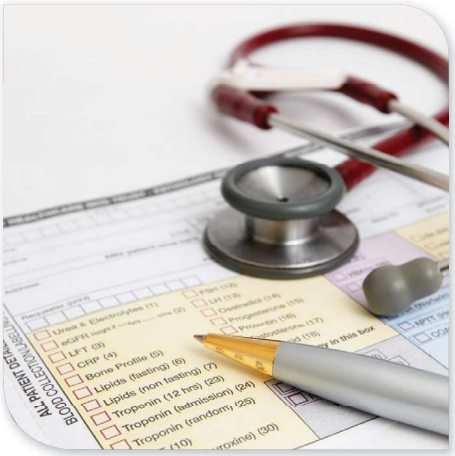
Under normal, healthy conditions, cortisol is released in response to stress and DHEA acts to counter-balance cortisol. Prolonged stress can overwhelm the HPA axis, burdening the adrenal glands and creating an imbalance in cortisol and DHEA ratios.

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.





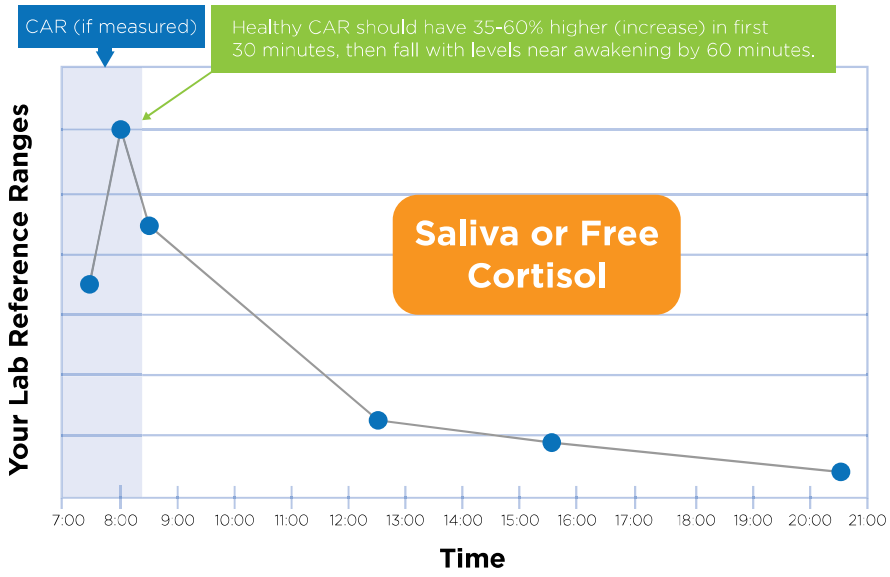
Assessing Your Stress-Response System with Lab Testing

The body's stress response is tested by monitoring cortisol levels throughout the day. A rhythm, or pattern has been determined as a "normal" circadian rhythm of activity (refer to cortisol graph below). As you can see, cortisol is the highest in the morning and levels progressively decrease as the day continues, until they are lowest as we are sleeping. To test your stress response, six samples will be submitted for the day, the first sample should be measured between 6:30 to 7:30 am. The next two samples will be collected 30 minutes and 60 minutes after the initial cortisol awakening level. Three more samples will be collected and charted in mid-to-late morning, afternoon and before bedtime.

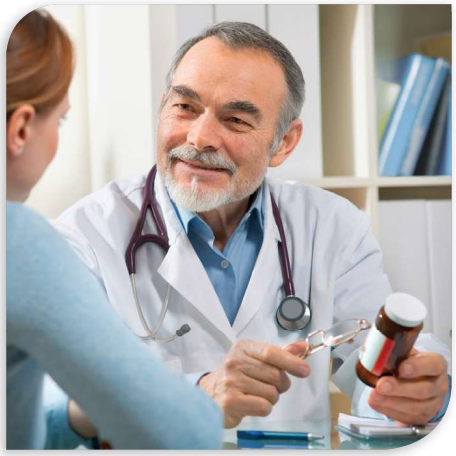
Cortisol and DHEA levels can be a valuable tool to determine how well your body responds to stress. When cortisol is elevated, it may mean you are being exposed to an uncontrolled immediate stressor, such as mental or emotional stress, blood sugar fluctuations, sleep cycle disruption or inflammation. When cortisol is suppressed, it may reflect prolonged, or chronic stress exposure.

Your health care provider may recommend testing in order to help determine if you have an imbalance in your stress response system.

There are several methods to measure your cortisol: blood, urine or saliva. The lab may evaluate total levels of cortisol, as well as other hormones, such as DHEA, melatonin, progesterone, estrogen and testosterone. Due to the nature of hormone balance, if one hormone level is high or low, another will tend to deter from normal as well. Examining the levels of these hormones will help identify additional imbalances that may be affecting your health.



The Three Stages of HPA Dysfunction are Typically Defined as:



Stage 1: Alarm Phase (Hyper-Cortisol). Individuals in this stage usually report feeling restless, irritated, or "wired." Immediate stressful situations are causing high cortisol production, but there is inadequate signaling within the HPA axis to shut-off excessive cortisol production. An inadequate diurnal rhythm may also appear in this stage, manifesting in higher levels of cortisol at night. This stage of HPA axis imbalance, if left unchecked, can eventually affect other systems in the body, such as weakening immune response, as well as contribute to loss of sleep, anxiety, weight gain, insulin resistance and blood sugar fluctuations.

Stage 2: Resistance Phase (Cortisol-Dominant). This stage may be the result of ongoing acute adrenal dysfunction or the accumulation of years of mild stress without adequate relaxation and recuperation. Lab testing may indicate erratic patterns of cortisol production, inadequate diurnal rhythm, as well as reduced levels of DHEA.

Stage 3: Exhaustion Phase (Hypo-Cortisol). This later stage of HPA dysfunction is typically associated with a multitude of issues, including fatigue, severe insomnia, depression, hormonal imbalances, or an increase in pain and inflammatory conditions. Test results in stage three will show depleted levels of cortisol and DHEA (Addison's disease is the complete loss of cortisol production). Individuals in this stage may find even the simplest tasks have become difficult to complete.

Through a process of physical examination, health history, lifestyle and nutritional assessments, as well as lab testing, your health care professional can determine what level of stress or fatigue you are currently experiencing and develop recommendations to help you get on the road to recovery.

Cortisol Awakening Response (CAR)

There is a predictable rise and fall of cortisol within one hour of waking. Morning salivary cortisol samples are taken at three times: as soon as you awaken, 30 minutes after awakening and again at 60 minutes. The results represent a mini "stress test" for how the HPA axis is responding to stress and pertains to anticipated demands of the upcoming day. It gives the clinician guidance on the patient's overall lifestyle, how the HPA axis is functioning and assists in developing a prognosis and program for recovery.

Elevated CAR

Indicates an increase of perceived stress, or other mental and physiological stressful drivers. The stress response is heightened and increasing the amount of cortisol being released. This may cause restlessness or irritability. It is key to work with a health care practitioner to design appropriate lifestyle management to ease and eliminate the stressor(s) that is causing this stress response. If the stressor is not identified, the condition will progress and begin affecting other functions, like blood sugar regulation, sleep disturbances, greater mood challenges, and inflammation.

Suppressed CAR

A low cortisol response in the morning reflects a down-regulated stress response or depletion in resources. This is attributed to an individual experiencing chronic stress, which triggers an overabundance of cortisol release and eventually leads to burnout. Common causes are sleep apnea, PTSD, seasonal affective disorder, chronic fatigue and true adrenal insufficiency.

Normal CAR

Healthy individuals respond appropriately to stress and cortisol values are within reference range. Symptoms are what leads practitioners to order tests. If a patient is having symptoms that would direct a clinician to order a salivary test and CAR is within reference range, the four-point diurnal cortisol rhythm may be irregular. A normal CAR, however, typically indicates a shorter recovery time for the patient. This is a perfect opportunity to assist an individual with healthy lifestyle management, glycemic control, nutritional supplementation and seven to nine hours of quality sleep.

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).**

4 Key Stressors Questionnaire

Patient Name: _____ **Date:** _____

Please circle **yes** or **no** for each of the following questions. Please fill in the Other sections for any unlisted issues related to each category.

After identifying and reviewing your primary stressor(s) with your health care provider, please refer to the corresponding chapter **(Chapter 1: Blood Sugar Control, Chapter 2: Mental and Emotional Stress, Chapter 3: Overcoming Insomnia, Chapter 4: Reducing Inflammation)** in the SOS Stress Recovery Program Patient Handbook for lifestyle, dietary and nutrient therapy recommendations.

Blood Sugar Imbalance

- Do you experience symptoms of hypoglycemia such as dizziness, shakiness or brain fog between or following meals? Y N
- Do you frequently miss or delay meals? Y N
- Do you frequently crave sugar or carbohydrates? Y N
- Do you consume excessive sugar or refined carbohydrates? Y N
- Are you diabetic or pre-diabetic? Y N
- Do you regularly consume alcohol or caffeine? How much per day? _____ Y N
- Do you consume food within two hours before bedtime? Y N
- Other _____

Mental and Emotional Stress

- Do you frequently experience anxiety? Y N
- Do you suffer from depression? Y N
- Do you suffer from mood swings? Y N
- Do you have difficulty getting motivated? Y N
- Do you frequently experience feelings of agitation, anger, fear or worry? Y N
- Do you consider your job, relationships or finances stressors in your daily life? Y N
- Are you a caregiver for a parent or disabled child? Y N
- Other _____

Sleep Cycle Disturbances

- Are you experiencing problems falling asleep? Y N
- Are you experiencing difficulty staying asleep? Y N
- Are you sleeping less than 7-9 hours each night? Y N
- Do you awaken not feeling well-rested in the morning? Y N
- Do you work 2nd or 3rd shift or keep late night hours? Y N
- Do you use electronic devices within two hours before bed? Y N
- Do you eat within two hours of bedtime? Y N
- Do you frequently feel drowsy throughout the day? Y N
- Do you snore? Y N
- Other _____

Inflammatory Imbalance or Chronic Pain

- Musculoskeletal: Do you suffer from headaches, muscle, back or joint pain? Y N
- Gastrointestinal: Do you suffer from IBS, Crohn's disease or diverticulitis? Y N
- Dermatological: Do you suffer from hives, eczema or psoriasis? Y N
- Respiratory: Do you suffer from asthma, bronchitis, seasonal allergies or hay fever? Y N
- Autoimmune: Do you suffer from any autoimmune condition such as MS, lupus or rheumatoid arthritis? Y N
- Immunological: Do you suffer from food allergies, chronic infections or frequent illness? Y N
- Other _____

Lifestyle Matrix
RESOURCE CENTER

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