

## The Impact of Stress on Health and Disease

The National Health Association (NHA) fully recognizes that one of the most important and overlooked parts of healthcare is how you react and respond to the stresses of your life. This is a modern-day understanding of the concept of “emotional poise” that pioneers like Dr. Herbert Shelton highlighted as an essential hygienic requirement of life and health.

The discussion of stress brings us directly into the arena of mind-body connection addressing how the psychological and emotional fabric of our lives affects the health and function of the body and vice-versa. This connection continues to be reinforced by a large body of clinical and research data. For example, the chronic stress experienced by caregivers taking care of sick and dying relatives results in a suppression of the immune system that manifests as slower wound healing and increased susceptibility to bacterial and viral infection. As a result, there are numerous physicians and scientists who feel that as much as 80 percent of everything we suffer with as human beings is stress-related, including heart disease, cancer, and weight gain.

Defining stress can be confusing because it takes on different meanings under different circumstances. Stress can be positive when it motivates the performance of athletes or performers or it can be negative and overwhelming when it is associated with the conflicts and pressures of life-cycle changes (childhood to adolescence to adulthood), lifestyle changes (single to married to divorced), or traumatic and catastrophic events.

### Causes of Stress and the Adaptation Response

To simplify, the causes of negative stress can be described as the three Ts: trauma, toxins, and thought. Physical injuries/accidents of all kinds come under the heading of traumatic stress. All the toxins that we ingest and are exposed to from the environment are a major component of chemical stress. Eating an animal-based diet loaded with processed, refined foods provide a panorama of toxins, including pesticides, heterocyclic amines, trans and oxidized fats, AGEs (advanced glycation end products), excessive salt, refined sugar, oxidized cholesterol, and other free radicals. A whole-plant-food diet without salt, oil, and sugar significantly eliminates toxins and chemical stress. Thought stress includes the typical emotional and psychological tensions, traumas, and upsets that most people associate with stress.

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Regardless of the cause of stress, all animals, including humans, have the inborn ability to confront, resolve, and survive threatening and traumatic events in our environment. When you encounter these stressful circumstances, there are basically two options. You can fight the situation head-on, or you can turn and run away from it. These strategies are referred to as the fight-or-flight or arousal response.

For the body to fight or run, it needs to get as much blood and oxygen as possible into the muscles in the shortest period of time, so the actions, or symptoms, of arousal are designed for a short-term survival response to provide this much needed oxygen and blood supply.

These actions include:

- Increased muscle tension,
- Increased blood pressure,
- Increased heart rate,
- Increased respiratory rate,
- Decreased digestive function,
- Decreased immune system function,
- Decreased libido and sexual function, and
- Increased cholesterol.

These actions of fight or flight are mediated by the glands of stress, the adrenal glands, as part of the body's general adaptation response (GAR). The GAR occurs in three steps—alarm, resistance, and exhaustion. When you first encounter a stressful situation, adrenal glands release the hormone cortisol and the neurotransmitter norepinephrine, signaling a chemical alarm to promote the fight-or-flight response and resolve the stress as quickly as possible. If the stress continues, the adrenals work harder and harder to resist the ongoing stress, and if the stress continues beyond the body's ability to handle it any longer, you will become depleted and exhausted. Unfortunately, because of the relentless pressures of modern life, too many of us are living in a state of excessive stress and exhaustion. And instead of getting the rest and sleep we need, we use more and more toxic stimulants (including coffee, refined sugar, and energy drinks) that only create more stress and exhaustion.

In the fight-or-flight response, the body expresses the actions and responses that it has evolved to create for our benefit and survival. If you look carefully, you will notice that these very actions of healthy survival are the very things that drive most people to doctors' offices on a daily basis: musculoskeletal pain syndromes, high blood pressure and cardiac problems, a litany of respiratory dysfunctions, the panorama of digestive difficulties and immune system disorders, an epidemic of libido loss and sexual dysfunctions, and cholesterol excess.

Therefore, on a regular basis people are running to doctors' offices trying to medicate out of existence the very actions that the body has found necessary to create for their benefit. Rather than just treating stress-related symptoms with medication and medical intervention, it is most important to consider and address why your body has found it necessary to chronically create and relentlessly maintain these responses.

## The Changing Nature of Stress

To understand this better, consider the changing nature of stress. The fight-or-flight response evolved to effectively deal with tensions, threats, and challenges as they occurred in present time so that

when you encountered these situations you could confront them, discharge the tension, and move on to your next survival challenge.

Unfortunately, in modern times our stressors have become more of the gnawing, nagging stressors of interpersonal relationships and the abstractions of human communication. So instead of discharging the tension in present time you can get lost in the sorrows and traumas of the past or become worried and apprehensive about your insecure future. As a result, you lose contact with the only moment you have, which is the precious present. Remember the past was your present at one time, and the future will be your present at some point, but the only place you can truly access your life is the current moment. When you lose contact with your present, you become less and less effective in discharging, changing, and resolving the stressful situations of your life.

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When you maintain and hold on to the stress of your life, the fight-or-flight response stays turned on, so something like high blood pressure, which initially occurred for your survival and benefit, will then be carried on and can become a condition of chronic disease. The high blood pressure is not your basic problem; your inability to effectively discharge it in present time is. If blood pressure stays up high enough long enough, it can damage your brain, your heart, and your kidneys, and every step along the way there will be a coterie of physicians who will gladly treat every one of these problems. In the words of the research scientist, Robert Sapolsky, "Stress-related disease occurs because we often activate a physiological system that has evolved for responding to acute physical emergencies, but we turn it on for months on end worrying about mortgages, relationships, and promotions."<sup>1</sup> Therefore, stress response management requires

bringing your attention into present-time awareness and allowing the stress response to turn off.

## The Connection of Stress, Immunity, and the Intestine

The impact of stress on the immune and digestive systems is a clear example of how stress can compromise the healthy function of the body. Approximately 70 percent of the immune system is in the intestinal tract. The first line of immune defense is a specific protein immunoglobulin called secretory IgA (sIgA) that is found in the mucous lining of the intestinal tract. All offending agents, including viruses, bacteria, and threatening food antigens, have to get through sIgA in order to enter the body.

Nerve fibers from the brain and sympathetic nervous system (the part of the nervous system primarily activated by stress) directly innervate the cells and tissues of the immune system, including bone marrow, thymus gland, spleen, lymph nodes, white blood cells, and lymphocytes, to directly affect and potentially compromise the white blood cells and natural killer cells involved in natural immunity.<sup>2,3,4,5</sup> In addition, the hormone cortisol and the neurotransmitter noradrenaline released during stress can directly attach to white blood cells and negatively affect their function and involvement in natural immunity.<sup>6</sup>

The integrity of digestion and intestinal health is maintained by the population of healthy bacteria and yeast that naturally inhabit the intestine. Chronic stress with excessive cortisol release can disturb the balance of intestinal flora and create a state of dysfunctional microbial ecology called dysbiosis. In dysbiosis, healthy bacteria are damaged, resulting in an abnormal overgrowth of unhealthy bacteria and yeast and potentially inducing a state of disease by inflaming and damaging the lining of the intestine and reducing your digestive efficiency/nutrition and immune response.

## Perception, Stress, and Mind-Body Balance

Our ability to adapt to stress happens subconsciously as part of our automatic, or autonomic, nervous system. In a sense, the wisdom of the body doesn't want to

risk that you might do the wrong thing if your life is threatened, so it takes it out of your hands and makes it part of an innate, automatic survival response.

Since there are automatic, subconscious features to the stress response, it suggests that there's not much you can actively do about it. However, this is a misconception that could not be further from the truth. It is important to realize that in spite of the automatic, reactive features of the stress response, there is so much that you can do proactively, consciously, for your own stress-response management and mind-body balance.

Every second of every day, millions of bits and bytes of information in your experience and environment are being filtered by your brain into the thoughts, ideas, and language that are unique to you. No two people process this information in exactly the same way. Each of us has a unique history, story, and set of experiences that create a personal frame of reference through which our individual perceptions construct our individual real worlds.

This suggests that there are as many real worlds as there are people perceiving them. It is only when the fields of energy in the external world collide and interact with your brain and consciousness that you can perceive the sights, colors, sounds, and objects of your experience. What you think you see is the result of your own brain organizing the energy of the environment into the substance and objects of your experience.

This filtering process also shapes and defines your individual beliefs, behaviors, and experience. As a result, what you come to believe leads to specific behaviors that shape and create experiences that will often reinforce your beliefs like a self-fulfilling prophecy. Unfortunately, you can get into the rut of believing that what you believe is all that there is. You can be imprisoned by a limited view of the world that is written inside your own head when in fact, any time you so choose, you can break out of the prison of your own mind and open up to a more diverse and expansive world of possibility.

Your beliefs can change, your behavior can be modified in a supportive healthy direction, and you can open up to a new and varied set of experiences. Understand

the power of your own perception. Stress is truly not in the events of your life but in the perception of the events. This suggests that a most important major component of stress response management is using the tool of your own perception to alter how you look at, construct, and react to the events of your life. You have the power to change the impact of the events of your life by simply delaying your reactive responses while looking at and reframing the events in a different way. Looking at things differently in a more open-minded manner can often make all the difference and reduce your stress significantly.

Also, because of the remarkable capability of the brain, you have the capacity, any time you so choose, to make proactive choices through your own free will that can reshape the patterns of your own mind-body interaction. And as you make healthier choices with patience, practice, and consistency, these choices can be woven into the tapestry of your nervous system to become habitual parts of your behavioral repertoire.

### Stress-Response Management

Of course, it is important to eliminate as many of the stressful circumstances of your life as possible. However, for those stressors that you can't change, it is critical to employ techniques and practices that can help you respond to them more effectively. It is in your best interest to take at least 10–20 minutes daily to incorporate some yoga, tai-chi, or some relaxation or meditation technique. This is a constructive way for you to step back from the chatter of your life and promote present-time awareness. Or, you can take some time to just sit still or lie down and listen to quiet peaceful music at the end of your busy day to also promote a relaxed state of mind. This quiet time alone, and these constructive practices, are essential parts of any stress management program. In addition, consuming a plant-exclusive diet without added salt, oil, and sugar will eliminate toxins that are an important cause of chemical stress and will provide peace of body and mind.

In addition, the way that you breathe has a major impact on your own stress-response management. Breathing is the most primal function of life. Your breathing pattern is directly linked with your emotional state and

mental health status. In fact, your breathing pattern plays a major role in dictating your emotional state. If you breathe in the rapid and shallow breathing pattern of anxiety and stress, as many people do in our stressed-out culture, you will create an anxious state of mind whether you have anything to be anxious about or not. Doing simple, slow, nasal breathing techniques are an easy and accessible approach for reducing the impact of stress and creating peace of mind.

The NHA recognizes that the impact of stress is a significant and overlooked risk factor that can compromise all body systems and diminish your quality of life and health. The NHA also strongly emphasizes that emotional poise and stress-response management are essential requirements of health. Simple techniques involving reframing, breathing, meditation and movement in conjunction with plant-exclusive nutrition can minimize the causes of stress and allow healthy habits to become a regular part of your life.

#### REFERENCES

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