

Chronic Pain And Stress



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How much of our modern-day lives are spent in overdrive? Work, deadlines, commuting, managing the kids, hosting for the holidays ... the list goes on. And that is just the busyness on the outside—what about the inside world? A multitude of incessant thoughts and emotions, some good, some bad.

For a lucky few, even while in "go-go-go mode," they maintain an inner calmness—some have a natural tendency to be that way or have learned to cultivate this through mindfulness or meditation.

Others, however, may feel overwhelmed or anxious in the face of a hectic schedule and life's pressures. In physiological terms, such a response has big implications on our nervous system, and ultimately, our health.

The Physiology of Stress

A quick lesson in science—the body's involuntary functions, such as heart rate, respiration and digestion are handled by the autonomic nervous system, which is divided into two parts—the sympathetic and

parasympathetic nervous systems. The sympathetic nervous system prepares the body for stressful situations—think of the "flight or fight" response. The parasympathetic nervous system does the opposite—it promotes the "rest and digest" response that calms the body down.

An evolutionary purpose of the sympathetic nervous system is to increase survival in the face of danger. When confronted by a lion, for example, a cascade of physiologic changes take place in the body—heart rate, blood pressure and respiratory rate all increase, blood is diverted toward muscles from other important organs, and stress hormones, such as cortisol, are released.

In the modern era, such a response no longer occurs from lions in the wild, but from everyday stressors associated with work, over-scheduled lives, information overload and negative-thinking patterns.

Unfortunately, the body cannot identify whether stress is caused by the threat of a wild animal, a screaming toddler or a hard day at work—it merely responds. The problem is that our nervous system was not designed to react to stress CONSTANTLY.

When stress simmers in the background of our daily lives, too much demand is placed on the sympathetic nervous system, which over time, can have damaging effects on the body. It affects organs, neuroendocrine balance and suppresses the immune system. Eventually, it can lead to an increased risk of heart disease, stroke, cancer and other disorders, including chronic pain.

Stress and Pain

As described, chronic stress overload has broad multisystem consequences and directly impacts inflammation. Research shows that constant stress can lead to chronic low-grade systemic inflammation in

the body, making one more susceptible to tendonitis and other common pain syndromes.

Stress can lead to an increase in muscle tension, which when experienced repetitively, leads to muscle guarding. This can result in pain in various parts of the body including the upper and lower back, neck, shoulder and other joints.

Stress also directly impacts pain processing, affecting how you experience pain and the severity of that pain. How is this so?

Chronic pain is a complex phenomenon. Pain is not simply experienced based on a switch that is activated in the body's periphery, but involves circuits in the central nervous system (spinal cord and brain) that can either diminish or exaggerate pain depending on factors such as mood or stress. Over time, when exposed to repetitive stimulation and inflammation, changes can take place at the level of the pain receptors, the spinal cord and the brain, resulting in hyper-reactivity of the central nervous system. In other words, the brain and spinal cord, "turn up the volume" in response to any unpleasant stimulus—leading to more pain at lower thresholds. This can occur with all chronic pain conditions, including disorders of the spine, osteoarthritis, failed back surgery syndrome, pelvic pain and more.

Stress and chronic pain can become a cyclic phenomenon, which leads to maladaptive behaviors, such as lack of exercise, sleeplessness, poor eating patterns, consuming too much alcohol or caffeine, ultimately leading to—you guessed it—more pain.

Building Resilience

The good news is that we can all build resilience in the face of life's stressors.



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Happy Holidays!

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A key concept to understand is that stress is a state of emotional tension or strain due to the perception of pressure and, in turn, the body's response to it. Said differently, the way in which we perceive a stressor determines its physiological impact. This is why it is important to implement individualized mind-body medicine techniques to develop self-awareness as it relates to our thoughts, emotions and reactions to external stressors while cultivating intentional responses, thus reducing the burden of sympathetic overload on the body.

Here are eight implementable techniques to improve resilience in the face of life's pressures:

1. Mindfulness. Develop mindfulness or meditation practices—this helps create awareness of the space between the stimulus and the response in a situation. Yoga can also help with this. Find time throughout the day to center yourself, shut your eyes and take a few deep breaths.



2. Brain Breaks. Given the overstimulation we face from devices, screens and media, it is important to



give our brains a timeout. Take dedicated brain breaks—go for a walk, stretch or just sit in silence without doing anything for a few minutes. Relaxing with your iPhone does not count.

3. Avoid Multitasking. Focusing on one thing at a time allows us to enter a state of concentration, which at its highest levels results in "flow," naturally producing feel-good chemicals, such as endorphins.



4. Move It. Remain active and avoid sedentary behavior—getting up frequently and moving around throughout the day will help you regain a sense of calm. Exercise regularly.



5. Find Your Good Mood. Make an effort to find joy, be it with friends and family, by connecting with nature or through other healthy activities and hobbies. Positive emotions are protective for whole-body health. And don't underestimate the stress-relieving power of a good laugh.



6. Avoid Distractions. Limit the use of social media and create hygiene around device use. Consider scheduling specific times to look at your phone or check email.



7. Sleep. Despite being able to "get by" on less sleep, the body recovers best when you sleep 7-8 hours a night.



***Keep it Simple.** Avoid overscheduling and unnecessary commitments when you can. Consume a diet with foods that are as close to the source as possible—highly processed foods have a bigger impact on inflammation and mood than you think.

Dr. Arti Panjwani is a board-certified Physician in Physical Medicine & Rehabilitation ("PM&R") and in Lifestyle Medicine. She is the founder of Elevate PM&R, a medical practice that helps patients facing various pain syndromes by taking an approach that treats pain's root causes. Dr. Panjwani implements an individualized, whole-body approach to resolve pain that incorporates multiple aspects of a patient's lifestyle, including diet, sleep, exercise, stress resilience and more.

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