



The Science Behind Stress and How to Relieve the Symptoms

77% of Americans surveyed by The American Institute of Stress report physical symptoms as a result of stress.¹ It may surprise you to learn this was well prior to the COVID pandemic, in 2017. The stress load today, specifically for dental practice owners and employees, may be much higher. Temporary practice closures are contributing to the stress load. According to the same survey¹, the most common sources of stress included:

- The future of our nation
- Money
- Work
- Political Climate
- Violence/Crime

Several of you reading this may find more than one category applies during this health crisis. Although it is not an economic crisis, it is certainly a health crisis with economic implications. Rapid changes in our everyday lives are naturally creating stress. It may be time to employ some health strategies to reduce the load by following the science.

The Science

A stressful event creates a release of hormones, called cortisol, by the hypothalamus through the adrenal glands into the blood stream. Your blood sugar increases, adrenaline causes a more rapid heart rate and oxygen fills your muscles creating tension. Acute stress takes about 90 minutes for the metabolism to return to normal when the response is over.⁴ Chronic stress, that is maintained at a lower level but for a longer period of time, can have life-long health implications. In fact, according to Harvard Medical School, *“repeated activation of the stress response takes a toll on the body. Research suggests that chronic stress contributes to high blood pressure, promotes the formation of artery-clogging deposits, and causes brain changes that may contribute to anxiety, depression, and addiction. More preliminary research suggests that chronic stress may also contribute to obesity, both through direct mechanisms (causing people to eat more) or indirectly (decreasing sleep and exercise)”*.² This is true for chronic low-level stress as well as repeated episodes of high-level stress. Chronic stress is more challenging than acute stress as the continual source of stress does not allow the body a chance to correct itself and return to normal functioning. Symptoms can manifest as sleep disorders, digestive challenges, cardiovascular episodes, headaches, overall anxiety and more.

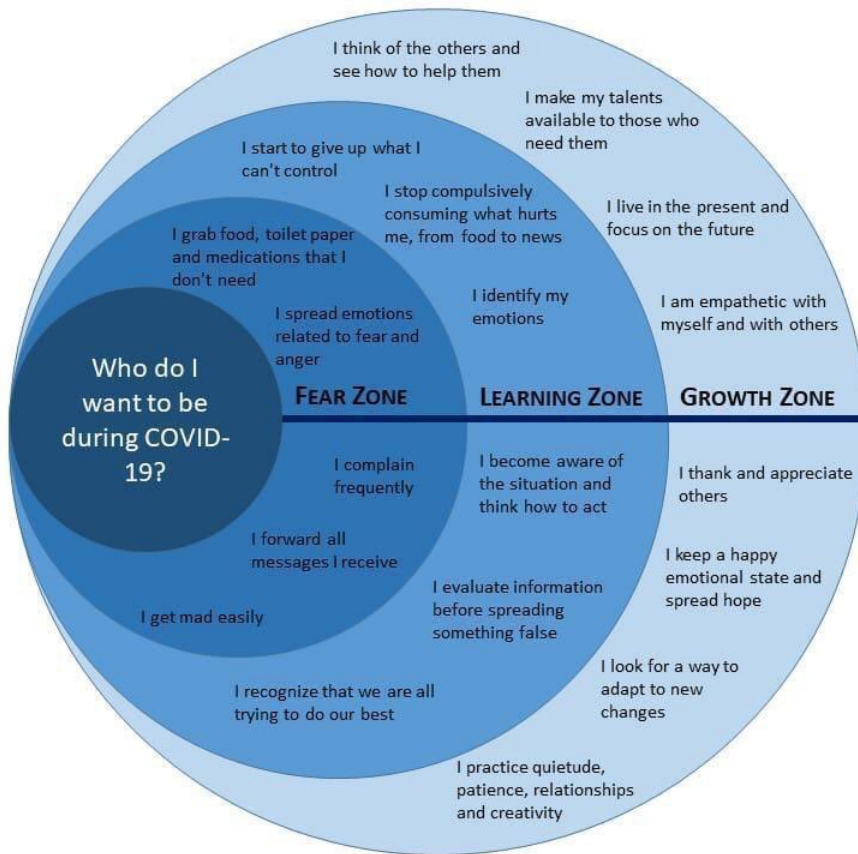
The Stages

The image below, author unknown, is an adaptation of popular fear to growth models of behavior. You may have seen several variations through social media during this crisis. Identify where you are currently and what the behaviors of the next stage look like. Be kind to yourself as you determine where you currently fit. People who have suffered a larger impact may move more slowly through these stages, and that is okay.



Ideally, the situation causing stress is identified, removed, and life goes back to normal. In our current situation, small victories along the way will reduce the release of cortisol such as economic relief from various legislative measures. Fortunately, there are also additional measures we can take to control cortisol release and counter the stress response. Acute stress situations warrant deep, abdominal breathing techniques as well as meditation to lower the stress hormone. Chronic, low level stress needs a different, longer-term strategy to reduce negative health effects.

- **Be observant** - Identify the signs and symptoms of stress in your body and take action. Identify the current stage you are in and know your reactions are normal.



- **Talk to a healthcare provider**

If you are unable to minimize your body's response to stress, reach out to a healthcare professional for options.

- **Positive Thoughts** Identify the positive outcomes that are a result of this situation. Perhaps you are finding the opportunity to connect at a deeper level with your partner, children, or even pets. You may have spent time re-evaluating life goals or simply cleaned out a cluttered closet. Negative thoughts can

spiral quickly, consume your mind, and trigger the release of more cortisol. The science behind stress continues to control your body. Reduce this cycle by forcing positive thoughts into your daily routine. Make a list for easy reference in order to displace negative thoughts. Replacing negative thoughts with positive ones gives your body a break – and your health a boost. Don't underestimate the power of positive thoughts.



Exercise/Walk Stress hormones create an energy in your body that signals a “fight or flight” sensation. Release this energy through exercise, just 30 minutes of walking will help. Remaining stagnant, such as sitting at a desk, does not allow an opportunity for that stress to dissipate. Physical exercise produces endorphins which get your blood flowing. Endorphins, commonly known as the “natural painkiller”, help you to sleep. You may notice after a workout that you sleep more soundly. Endorphins help you sleep, and cortisol release diminishes during sleep.

Diet It may seem obvious, but diet plays a large factor in limiting our body’s ability to deal with stress. Caffeine and alcohol, in particular, make it difficult to maintain a lower stress level as alcohol blocks the chemical adenosine and has an effect on serotonin. You may not feel as though you can control the chemical response to stress, but you can control the chemical response created by diet choices.

Meditation While meditation can be hard to achieve without practice, taking time to focus on tranquil images, free from noise and distraction can lower blood pressure. Similar to exercise, meditation produces endorphins that help with better sleep.

Community Support Speak about your stress and anxiety to family, friends, coworkers, and mental health professionals. You may be surprised they feel the same stress during this time and you develop a “we are in this together” camaraderie. Utilize technology to chat with video.

Relaxation Activities Explore meditation apps and set aside time to center your thoughts to provide a mental and physical stress break.

Best anxiety Apps of 2019 from Healthline⁵

- Headspace
- Rootd
- Acupressure: Heal Yourself
- Stop Panic and Anxiety Self-help
- Sleptime
- Relax and Rest Guided Meditations
- Calm
- Stop, Breathe and Think

Ted Talks

- *Checking In* with Susan David
- *How to Make Stress Your Friend* with Kelly McGonigal
- *All it Takes is Ten Mindful Minutes* with Andy Puddicombe
- *How to Stay Calm when you Know you’ll be Stressed* with Daniel Levitin

Books

- *Why Zebras Don’t Get Ulcers*, Robert Sapolsky
- *Rising Strong*, Brene Brown
- *Declutter Your Mind*, SJ Scott



Sleep Habits For a long time, it was believed that sleep deprivation was a symptom of stress. Recently, studies are showing that perhaps it is the opposite: sleep deprivation causes stress.³ During REM sleep, the stage of sleep where dreams happen, it's been found that levels of norepinephrine and cortisol decrease. Essentially, more time spent in the REM stage of sleep will reduce stress.³ Develop good sleep habits that include a routine bedtime with tranquil, meditative exercises to increase REM sleep.

Set goals and lists You may not be able to remove the stress, but you can diminish the impact by setting goals and accomplishing tasks. Make a list of things you would like to improve around your home, garden, or other area that will give you joy on completion.

Stressful events have a beginning, a middle and an end. People react differently, and enter different stages of stress at different times. Be patient with yourself, and others, as we all face this crisis together.

References:

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