

# Stress, Addiction, and Native Americans: A Pathway to Healthier Living

Catching Up With COSSAP, December 2020

Stress is a major concern among American Indian/Alaska Native (AI/AN) populations because of the toll it takes on mental and physical health, as well as the strong relationship between stress and relapse into addictive behaviors. Indeed, chronic stress places AI/AN populations at higher risk for chronic disease, mental health disorders, and substance abuse than the general population. Further, susceptibility to chronic stress is exacerbated by issues such as adverse childhood experiences as well as those specific to tribal populations, such as historical trauma, political turmoil, and systemic injustice.

For Comprehensive Opioid, Stimulant, and Substance Abuse Program (COSSAP) grantees—and anyone else—working to address substance abuse in tribal areas, this article offers support across three broad areas. First, it

defines stress and anxiety and how they affect behavioral health outcomes in Native American populations. Second, it outlines ways to mitigate, embrace, and reduce stress. Finally, the article addresses the implications of stress resiliency for tribal communities.

## What Is Stress?

Stress is the body's natural response to its environment and how that environment is perceived. Stress is tricky to define because it is experienced differently by each person. If you observe people on a roller coaster, you might notice that some are scared to death and clutching the handrails, some seem indifferent by masking all their emotions, and some delight in the thrill. The same stressor is being presented to each person, but reactions vary widely.<sup>1</sup> Therefore,



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stress is often defined by instances when demands of the situation exceed our capacity to handle them effectively. Our perception of the stressor is shaped by past experiences, learned behaviors, environments we have been exposed to, and our genetic makeup.

Stress is both a neurological (brain) and a biological (chemical) response. We have two primary systems in our brains—the limbic system and the frontal cortex. The limbic system is our old brain: It keeps us safe, is responsible for our fight/flight/freeze/appease reactions, filters information, and houses our reward circuitry. We call this system the “lizard brain.” The lizard brain derives its understanding of the world from the past and is ineffective at thinking about the future or assessing the potential consequences of our actions. That job is done by our frontal cortex, also called our “wizard brain.”

Our frontal cortex helps us think through things, be creative, and manage our thoughts and feelings and impulses. Unfortunately, in times of stress, fear, or anger, when our safety is threatened, or when we feel judged, dismissed, or attacked, our limbic system takes over, which hijacks our response. This produces a series of physical and chemical reactions in our bodies: Thousands of chemicals are released into our bloodstream, which increases our fight-or-flight response. We lose our sense of humor and our creativity and make quick judgments about others’ intentions.

Further, because in this response we lose our wizard brain, we cannot problem-solve or think about the future. Our only way of making sense of the situation is by referring to the past. Because stress can feel uncomfortable, we frequently employ unhelpful ways to cope with it. This is made worse by the impact of stress on the reward system of the brain, which can result in increased cravings for alcohol or drugs, for example, and an increased vulnerability to relapse.<sup>17</sup>

Stress is not necessarily a bad thing, though. It can be a force for good, helping us focus, keeping us from danger, and enhancing our performance in some instances. A person’s outlook toward stress, as well as stress levels, largely determines whether the impacts of stress are detrimental or beneficial.<sup>2</sup>

Of the many chemicals that are released during stressful situations, two are worthy of our attention: cortisol and oxytocin. High levels of cortisol can have negative effects on the body in both the short and the long term, causing inflammation and adrenal fatigue. Oxytocin, on the other hand, has positive effects. It increases our social instincts, making us reach out for social support in times of stress.<sup>3</sup> It makes us more compassionate and caring. And, finally, it protects the heart by acting as an anti-inflammatory so that our blood vessels remain dilated in times of stress. Put another way, our bodies’ built-in mechanism for coping with stress is releasing oxytocin. Oxytocin increases our instinct to reach out for support, or connection, which thereby reduces our stress. Studies have shown that an appropriate level of stress can help a person thrive. Adding stress beyond that comfort zone typically leads to poorer health outcomes; however, when a person changes his or her perception of stress, that comfort zone will shift as well.

## Relationship Between Stress and Substance Use

Research has established the strong relationship between stress and the likelihood of relapse. Stress responses are predictive of the development of substance use disorders as well as vulnerability to relapse.<sup>17</sup> To manage the symptoms of stress, it is all too easy to turn to substances, given their immediate impact on the reward system. The rise in cortisol as a result of stress not only increases the intensity of cravings for drugs or alcohol, it increases the likelihood of binge drinking and results in increased anxiety, negative moods, sleep difficulties, and poor impulse control.<sup>18</sup> This feeds into a vicious cycle of using substances to cope with stress, which then increases stress, which then increases substance use. This is frequently referred to as the impaired control cycle.<sup>20</sup> Successful treatment of alcohol or drug addiction is mediated by reductions in stress; therefore, developing the ability to manage stress becomes one of the fundamental ways to reduce substance use in general and relapse in particular.<sup>19</sup>

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## Toxic Stress Faced by American Indian Populations

American Indians/Alaska Natives comprise approximately 1.6 percent of the U.S. population (about 5.1 million people). There are 573 federally recognized tribes, and among them a tremendous diversity of cultures and languages. Generally, individualism is highly valued within tribes, but also an orientation to the needs of the group.<sup>4</sup> Participation in cultural activities and religious practices can protect a person from emotional distress, so Native American groups with a strong sense of community have more stress-resilient members.<sup>5</sup>

AI/AN populations typically experience higher rates of health challenges compared with other racial and ethnic groups. These include obesity, asthma, smoking, psychological distress, suicide, and type 2 diabetes. Many studies have suggested that these health challenges are caused by higher rates of stress perceived by tribal populations. Historical traumas such as genocide, sociopolitical aggression, and lack of representation are a reality in the AI/AN population, and scholars point out that persons from poorer socioeconomic backgrounds, including those in tribal communities, are exposed to more stressors that increase their risk for poor health. Racial discrimination is associated with elevated blood pressure, psychological distress, and depression.<sup>6</sup>

Substance abuse, poverty, unemployment, loss of traditional values, and political turmoil are common in tribal communities, which can lead to feelings of helplessness and anxiety for some. Considering the paucity of resources available to Native American populations and the numerous environmental stressors they face, it is not surprising that they experience significant distress and that their mental and physical health suffers accordingly.<sup>5</sup> Management of this distress becomes even harder when individuals have limited coping mechanisms or if there is a history of substance misuse or addiction.

But while there are plenty of reasons for stress in Native American populations, that does not limit individuals' ability to learn to cope and adapt, to strive for a healthier lifestyle, and to utilize positive traits in their communities.

## Strategies to Embrace, Mitigate, and Reduce Life Stressors

Knowing how the brain works and identifying the feelings and emotions tied to responses to stress can help us react more favorably and amicably when faced with stress and the flood of stress hormones. When this process happens, we must work hard to regain balance, calm our limbic systems, and get our wizard back online. This involves removing ourselves from difficult situations, managing increases in cravings, or designating someone else to help us regulate them.

The incredible thing about our nervous systems is that we are able to pick up on each other's neurochemistry, thereby helping to regulate each other's responses. Getting our wizard back online takes self-awareness, discipline, and grounding techniques. Finally, to fully support our brains, we need to find a balance of work, rest, and play. Work is where our brains are focused, play is where we are trying something new or being creative and unstructured, and rest is where we allow our brains to be unfocused. In addition, we need healthy food, exercise, and sleep, as well as social connection and time for gratitude and reflection. The traditional concept of the medicine wheel employed by some tribes encompasses all of these strategies. Being mindful of our spiritual, intellectual, emotional, and physical selves helps us to stay in balance, since all four realms are interconnected.

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## Community, Social Connection, and Play

Human beings are social creatures who depend on social interactions for support, acceptance, and love. The support we get from our communities, friends, and families plays an important role in our ability to cope with stress and can even change our genetic makeup to cope with it.<sup>13</sup> It is important that we play as well. These moments enable us to live in the moment and forget about work, commitments, and the normal stressors of life for a while. Prioritizing play in our schedules with family, friends, and/or co-workers without the distraction of cell phones and emails enables us to reap the benefits of social connection and play. The following tips can prove helpful in reducing stress and organizing social connection.

- Spend time together engaging in a ritual, in prayer, or in meditation, according to your culture and tradition.
- When you feel stressed, reach out to someone. You do not have to talk about what is making you feel stressed; you can talk about anything.
- Reach out to someone you know who might be struggling too. Helping others often puts things in perspective and reduces our own stress.
- Host a regular game night with friends or family.
- Schedule time in a park or to throw a Frisbee or fly a kite with family or friends.
- Spend time outdoors or share meals together.
- Surround yourself with playful people. They will help loosen you up and are more likely to support your efforts to play.<sup>14</sup>

## Gratitude

We have a lot to be thankful for in life. Expressing gratitude for the things we have and the people around us is an effective way to reduce stress and anxiety, putting focus on the things we have and not the things we lack. Although it may feel contrived at first, this mental state grows stronger with practice.<sup>16</sup>

Here are some ways to cultivate gratitude on a regular basis:

- Write a thank-you note. You can make yourself happier and nurture your relationship with another person by writing a thank-you letter expressing your appreciation for that person's impact on your life.
- Write a letter of gratitude to yourself.
- Keep a gratitude journal. Make it a habit to write down or share with a loved one thoughts about the gifts you have received each day.
- Count your blessings. Pick a time every week to sit down and write about your blessings—reflecting on what went right or what you are grateful for. It may help to pick a number—such as three to five things—that you will identify each week.
- Pray. Most cultural traditions use prayer to express gratitude. An example would be a prayer of gratitude at the start of a meal. For example, the Oneida Thanksgiving Address expresses thanks for every element and living creature from the sky world down.

## Mindfulness

Mindfulness can be defined as simply being where your feet are—being present in what you are doing while calmly acknowledging and accepting your feelings, thoughts, and bodily sensations. By paying attention to thoughts that are racing, repetitive, or nonproductive and acknowledging them, we can self-regulate and get our frontal cortex or wizard brain back online. While the practice may seem strange, many cultures have forms of prayer and meditation

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that have been shown to reduce stress and anxiety. Mindfulness can involve meditation, but also coloring, gardening, walking, praying, or any other activity that slows down our thoughts and enhances our ability to focus on one thing at a time. Mindfulness cultivates humility and allows us to view stress as a teacher. In a meta-analysis of mindfulness research, positive changes in psychological or physiological outcomes were found to be produced by mindfulness.<sup>12</sup>

## Nutrition

Your body is fueled by what is put into it. This can be taken literally as the food and water you eat and drink, but also figuratively as the books you read, the media you consume, and the people who surround you. Food should nourish your body, providing you with the vital micro- and macronutrients you need to survive. Stress creates a greater physiological demand for energy, oxygen, vitamins, and minerals, which also come from the food we consume. As a result, most people, when stressed, tend to eat “comfort foods,” which typically lack nutrients and are high in sugar and fat content. Sugary foods often heighten stress because they produce a spike in blood sugar and a crash after the resulting insulin response. This is a spiral effect: People eat because they are stressed and then get stressed because food makes them feel sluggish or depleted or makes them crave more.<sup>7</sup>

Ideally, eat real foods (versus processed) and enough of them to support your activity throughout the day. Complex carbohydrates such as whole grains, vegetables, and fruits balanced with protein have been shown to increase levels of serotonin, the “happy chemical,” in your brain. These fruits and vegetables also have essential vitamins and minerals such as copper, zinc, manganese, and vitamins A, E, and C, essential for creating balance after surges of stress and for helping to replenish the nutrients lost after stress regulation. Healthy fats such as omega-3 fatty acids found in walnuts, flaxseed, and fish are associated with healthy brain function; deficiencies in these fatty acids, conversely, can lead to higher levels of stress, anxiety, and depression.<sup>8</sup>

## Exercise

The physical benefits of exercise have long been established, and physicians always encourage their patients to stay physically active. But most important in this context is that exercise reduces stress. Exercise makes you more resilient to stress by giving your body more energy to deal with stress and improves your alertness and ability to concentrate, which are necessary to address stressful situations. Exercise produces endorphins that make you feel good, improve your ability to sleep, and keep you coming back for more. Exercise has been shown to decrease overall levels of tension; stabilize serotonin, cortisol, and oxytocin; elevate and stabilize mood; and improve self-esteem. Even five minutes of aerobic exercise can stimulate anti-anxiety effects.<sup>9</sup> Try the five-minute workout below to start your morning off right:

1 minute of jumping jacks or side steps

30 seconds of rest

1 minute of squats

30 seconds of rest

1 minute of high knee lifts

30 seconds of rest

30 seconds of mountain exercises

## Sleep

Sleep enables our brains to recharge and our bodies to rest. Two major functions of sleep are muscle repair and memory consolidation, so when we miss out on the recommended seven to nine hours of sleep, our memory, judgement, and mood can all be affected. Lack of sleep puts people at risk for health problems such as obesity and high blood pressure. Research has shown that most Americans would be happier, healthier, and safer if they slept an extra 60 to 90 minutes per night.<sup>10</sup>

“Sleep hygiene” plays an important part in the quality and amount of sleep you get each night. Employing some of the

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sleep tips below can help you to get better sleep, lower your stress, and make you more resilient to stressful situations.

- Keep a consistent sleep schedule. Get up and go to bed at the same time every day, even on weekends.
- Set a bedtime that is early enough for you to get at least 7 to 9 hours of sleep.
- Make your bedroom quiet and relaxing.
- Discontinue viewing computer screens and other sources of bright light at least thirty minutes before bedtime. This will help you to wind down and relax.
- Avoid eating and drinking too close to bedtime. Eating a large meal before bed can interrupt your sleep cycle; drinking too much can wake you during the night to use the bathroom.
- Regular exercise and a healthy diet will improve your sleep quality.
- Avoid consuming caffeine in the late afternoon or evening. The body needs time to process caffeine completely. Even if you think it does not affect you, caffeine can affect the quality of sleep and limit the body's ability to reach deep sleep cycles.
- Avoid consuming alcohol before bedtime.<sup>11</sup>

## Pets

Having a pet to bond with has been proven to be a great form of stress relief. Pets can reduce loneliness, increase feelings of social support, and boost your mood.<sup>15</sup> Petting dogs, specifically, has been shown to decrease cortisol levels and lower blood pressure in humans. Further, petting a dog or cat releases oxytocin in both the human and the pet. If you do not own a pet, a good option for getting more animal exposure might be to walk someone else's dog or volunteer at a local animal shelter.

## Implications of a Stress-Resilient Tribal Community

Stress is a powerful force in our lives, especially the lives of AI/ANs in the United States. Native Americans have faced historical trauma, racism, systemic injustices, and political turmoil that have bred a significant amount of emotional and physical distress. Further, with the higher rates of substance use and addiction experienced in tribal communities, it becomes even more important to manage stress and the increased vulnerability to substance use and relapse that stress brings. Against this history, AI/AN populations must find ways to cope with the many stressors of daily life. The tools listed above are ways that scientists and psychologists have suggested to lower levels of anxiety and stress. Many tribal communities already utilize a number of them in some fashion. For instance, many cultures focus on group and cultural participation, which can serve as a buffer to stress.<sup>5</sup> Applying more of these tools to the everyday lives of Native Americans through education and outreach to community groups in culturally appropriate ways may very well lower stress in a community, which, in turn, may improve physical and mental health outcomes and reduce rates of substance use, addiction, and relapse.

## Endnotes

1. What is stress? The American Institute of Stress. <https://www.stress.org/daily-life/>
2. Crum, A. J., Salovey, P., & Achor, S. (2013). Rethinking stress: The role of mindsets in determining the stress response. *Journal of Personality and Social Psychology*, 104(4), 716–733. <https://doi.org/10.1037/a0031201>
3. McGonigal, K. (2016). *The upside of stress*. Random House: New York, NY.
4. Whitcomb, S. A., & Merrell, K. W. (2013). *Behavioral, social, and emotional assessment of children and adolescents* (4th ed.). Routledge/Taylor & Francis Group: Abingdon, UK.

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- De Coteau, T. J., Hope, D. A., & Anderson, J. (2003). Anxiety, stress, and health in northern plains native Americans. *Behavior Therapy*, 34(3), 365–380, ISSN 0005-7894. <http://www.sciencedirect.com/science/article/pii/S0005789403800060>
- Elm, J., Walls, M. L., & Aronson, B. D. (2019). Sources of stress among Midwest American Indian adults with type 2 diabetes. *American Indian and Alaska Native Mental Health Research* (online), 26(1), 33–62. <https://doi.org/10.5820/aian.2601.2019.33>
- Singh, K. (2016). Nutrient and stress management. *Journal of Nutrition & Food Sciences*, 6, 528.
- Health and stress. University of North Carolina: Campus Health. <https://campushealth.unc.edu/health-topics/nutrition/nutrition-and-stress>
- Physical activity reduces stress. Anxiety and Depression Association of America. <https://adaa.org/understanding-anxiety/related-illnesses/other-related-conditions/stress/physical-activity-reduces-st>
- Stress and sleep. American Psychological Association. <https://www.apa.org/news/press/releases/stress/2013/sleep>
- Healthy sleep habits. SleepEducation.org. <http://sleepeducation.org/essentials-in-sleep/healthy-sleep-habits>
- Mindfulness for stress reduction. University of Minnesota: Taking Charge of Your Health & Wellbeing. <https://www.takingcharge.csh.umn.edu/mindfulness-stress-reduction>
- Ozby, F., Johnson, D. C., Dimoulas, E., Morgan, C. A., Charney, D., & Southwick, S. (2007). Social support and resilience to stress: From neurobiology to clinical practice. *Psychiatry* (Edgmont (PA: Township)), 4(5), 35–40.
- Robinson, L., Smith, M., Segal, J., & Shubin, J. The benefits of play for adults. HelpGuide. <https://www.helpguide.org/articles/mental-health/benefits-of-play-for-adults.htm>
- The power of pets: Health benefits of human-animal interactions. News in Health. <https://newsinhealth.nih.gov/2018/02/power-pets>
- Giving thanks can make you happier. Harvard Health Publishing. <https://www.health.harvard.edu/healthbeat/giving-thanks-can-make-you-happier>
- Milivojevic, V., & Sinha, R. (2018). Central and peripheral biomarkers of stress response for addiction risk and relapse vulnerability. *Trends in Molecular Medicine*, 24(2), 173–186.
- Davis, J. P., Berry, D., Dumas, T. M., Ritter, E., Smith, D. C., Menard, C., & Roberts, B. W. (2018). Substance use outcomes for mindfulness-based relapse prevention are partially mediated by reductions in stress: Results from a randomized trial. *Journal of Substance Abuse Treatment*, 91, 37–48.
- Blaine, S. K., Seo, D., & Sinha, R. (2017). Peripheral and prefrontal stress system markers and risk of relapse in alcoholism. *Addiction Biology*, 22(2), 468–478.
- Nandi, A., Wanberg, K. W., Timken, D. S., & Milkman, H. B. (2020). *Driving with care: Alcohol, other drugs, and impaired education strategies for responsible living and change*. Sage Publications: Thousand Oaks, CA.