

When we have stress at home or work, it can be mentally and physically challenging. When stress occurs over a short period but then resolves, there is time for our body to recover. However, our body does not have a chance to recover when stress is ongoing. So, what are the long-term effects when high stress is chronic? Can stress affect the brain and cause cognitive decline as we age? If so, are there ways to alleviate or prevent factors causing stress?

Key takeaways:

- The brain's "fight or flight" system in episodic stress activates the amygdala to protect the higher-functioning areas, including the hippocampus and cerebral cortex.
- When stress is ongoing and chronic, the brain does not have a chance to recover properly and can contribute to cognitive decline, according to a recent study.
- Perceived stress is stress that burdens a person's ability to cope. Treatment for psychosocial concerns and healthier lifestyle choices and habits can modify the impact of perceived stress.

What is a cognitive decline?

Cognition is the ability of our brain to think, reason, learn, and make decisions. As we age, there is a natural progression that affects our cognition. Simple things like a "tip of the tongue" experience may occur when you can't remember an actor's name or the restaurant you once visited. That is part of normal aging.

[A decline in cognition](#) may become more problematic when someone cannot remember steps to complete a task that used to be quite effortless. That level of decline is likely a sign of mild cognitive impairment or even early dementia.

The stress effect

Our brains are affected by aging, medications, chronic health conditions, lifestyle choices, and stress. For example, when we have a short-term stressful situation like an argument, sudden illness, or death in the family, the body reacts with a "fight or flight" response. As a result, the brain's survival area, the "amygdala," becomes overactive, takes over and momentarily overpowers the higher executive functioning areas of the brain (cerebral cortex and hippocampus) that you use for problem solving or memory.

The brain's temporary rewiring is a protective mechanism. However, because those higher-functioning areas in the brain are on "pause," momentary memory lapses can occur. However, this is short term, and once the stressful event is over or "settled," the body and brain can begin to recover and memory is restored.

But what about chronic long-term stress when there is little chance for a recovery phase? Stress has a way of causing havoc in our bodies. When chronically stressed for long periods, the risk for heart disease, high blood pressure, obesity, diabetes, and other chronic illnesses may increase. This chronic stress can also affect our brain health and cognitive status by triggering an inflammatory response hindering the regeneration of neurons.

The science behind stress and cognitive decline

Studies have linked stress to increased incidence of cognitive decline. Still, a recent study published in JAMA (Journal of American Medical Association) on March 7, 2023, had a large cohort suggesting that high stress levels directly affect cognitive decline. The study had almost 25,000 participants aged 45–98 (mean age 64) from diverse backgrounds. They initially recruited participants from 2003 to 2007. The actual analysis of stress and cognitive status occurred on recruitment as a baseline, then again between 2021 and 2022, about 11 years apart.

In this study, they measured stress as "perceived stress," which is the stress that burdens a person more significantly than their ability to cope. It is subjective stress, which makes sense that would be a main factor. What is stressful for me may not be for you. The study states that perceived stress is a modifiable risk factor. The respondents who reported high stress on enrollment and again at the 11-year mark during follow up had the greatest decline in cognition.

This study found that older adults with elevated levels of perceived stress were 37 percent more likely to have poor cognition than older adults with lower stress levels. This level was the same, regardless of gender or racial background. One of the recommendations from the study was for primary care practitioners to begin screening for stress when a patient presents with cognitive decline or during routine appointments. There may be opportunities to intervene before further cognitive decline and dementia.

How can we manage stress levels?

Some things, such as socioeconomic status, family dynamics, or pre-existing health issues, may be challenging to modify. First and foremost, visit your healthcare provider to discuss your physical health issues. Then a referral to a social worker or mental health professional may be beneficial to address some of the most difficult psychosocial problems. A professional can help people cope with their circumstances or empower them toward change.

Modifiable lifestyle choices

There are ways to empower people toward modifiable lifestyle changes to reduce stress and possibly reduce future cognitive decline. Lifestyle modification can occur now in older adults. However, younger adults can change to healthier lifestyles to leverage the odds.

- **Diet.** A healthy diet is rich in fruits, leafy green vegetables, whole grains, and nuts. Reduce red meat consumption. We often opt for fast food with the excuse of having limited time to prepare a meal. Healthy snack food choices are available. Consult with a dietician for education on improving your diet.
- **Physical activity.** Maintaining some physical activity for at least 20 minutes three times a week is beneficial. Low-impact exercises, including [Nordic walking](#), chair fit, Tai Chi, or yoga, can also benefit your [brain health](#). Always check with your healthcare provider before beginning any new exercise routine.
- **Practice stress-reducing activities.** Meditation, prayer, mindfulness, and affirmations might quiet your soul.
- **Journal writing.** This can sometimes help someone to sort out their thoughts and feelings, find solutions to their concerns, and reduce anxiety and stress.
- **Maintain social connections.** Connecting with family and friends or becoming involved in a community, church, or another interest group is healthy for your mind and body. Studies have shown that interaction with other people reduces depression and increases cognitive abilities.
- **Maximize sleep.** People under stress do not often sleep well. Yet, sleep is essential for nerve cell regeneration, cognition, and optimal brain health. Aim for 6–8 hours of sleep, try to limit napping during the day, get ample amounts of sunshine, reduce or eliminate alcohol and caffeine, keep your sleeping space dark and quiet, and limit screen time, particularly before bed.

Chronic high stress affects aspects of our physical and mental health. Regarding our brain health, research has recently associated chronic stress with an increased risk for cognitive decline. However, there are opportunities to reduce the incidence of cognitive decline; first, screen older adults for stress in primary care. Second, empower adults of all ages to start making healthier lifestyle choices to improve their physical health, reducing the risk of stress causing cognitive decline. Third, encourage people with difficult life circumstances to seek counsel from a mental health counselor to learn coping strategies or ways to conquer their adversities.

Resources:

1. [Association of Stress With Cognitive Function Among Older Black and White US Adults.](#)
2. [Does older adults' cognition particularly suffer from stress? A systematic review of acute stress effects on cognition in older age.](#)
3. [Psychological stress, cognitive decline and development of dementia in amnesic mild cognitive impairment.](#)
4. [Cognitive Health and Older Adults.](#)
5. [The Effects of Stress on Cognitive Aging, Physiology and Emotion \(ESCAPE\) Project.](#)