

# Coping with COVID stress: From pandemic brain fog to resilience

July 2 2020, by Hannah Messinger

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Everywhere you look, you're likely to see people facing an unprecedented amount of stress. With the COVID-19 pandemic comes a barrage of daily health anxieties, rising death tolls, increasing

unemployment numbers, and physical isolation—on top of strong feelings of frustration and anger as people protest against injustice across the country.

During this time of grief and change, many—to put it simply—just aren't feeling great. While feelings of anxiety and concern are normal during a crisis like this, this stress can impact people in a variety of ways. Overall, feelings of depression and anxiety are higher than ever before. There are also smaller manifestations and symptoms of stress, including headaches, inability to focus, physical aches and pains, and lack of sleep.

## **What's going on up there?**

Research suggests that the part of the brain called the [limbic system](#) is hyperactive during times of negative emotions and stress, explained Lily Brown, Ph.D., an assistant professor of Psychology in Psychiatry at the Perelman School of Medicine and director at the Center for the Treatment and Study of Anxiety. The limbic system acts as a control center for feelings and reactions. For example, the well-known fight or flight response begins in the limbic system, triggering feelings of anxiety and fear.

Having trouble thinking, planning, and getting things done recently? It could be related to stress from the pandemic. In many cases, when emotions become overblown, parts of the brain in charge of executive function tend to not communicate as well with the emotional parts of the brain—the limbic system is overriding the executive functioning circuit. Brown shared that this can cause people to have trouble focusing or controlling impulses.

You can reverse that cycle by using different language techniques or labeling emotions—a strategy called affect labeling—to help activate

executive functioning and control, reducing the activation of negative emotions related to stress. One key strategy to boosting resilience is mindfulness, taking a moment to be aware of surroundings to reduce stress levels.

In times of high stress, people are often thinking ahead and worried about the future, or worried about something bad that happened in the past. Mindfulness can pull on the prefrontal cortex—the region of the brain in charge of executive functioning—which can reduce emotional activation in the limbic system and help you stay calm and in the moment.

"One of the beautiful things about mindfulness practice is that you can use it through a lot of different strategies. For some, that means taking a meditation practice, or it can be helpful to practice mindful walking or running. You can even make a cup of tea or a pot of coffee in a mindful way—something to slow down all of the ruminative thinking or worrying ahead," Brown said.

Another way to combat the stress of the pandemic is to exercise and foster resilience. Resilience can improve coping abilities and mitigate negative emotions.

## **Building resilience**

The Lifespan Brain Institute (LiBI)—a collaboration of Children's Hospital of Philadelphia (CHOP) and Penn Medicine scientists under the guidance of Raquel Gur, MD, Ph.D., a professor of Psychiatry Neurology, and Radiology—developed an [online survey](#) with CHOP's Ran Barzilay, MD, Ph.D., and Brown to investigate resilience during this unprecedented time.

"COVID-19 has created enormous stress in people's lives around the

world, but it provided a unique opportunity to study how people remain resilient through such adversity," Gur said.

The [10-minute survey](#) is available to anyone who is interested in participating and contains questions about resilience, emotions, and stress during the pandemic. Participants immediately receive a personalized resilience profile with information and tips for their current mental health and sleep habits based on their survey responses. What's more, participants can opt-in for future research opportunities.

By establishing a registry of participants who are willing to be contacted in the future, Gur and the LiBI team plan to investigate the power of resilience and how COVID-19-related stress could affect people over time, as well as other questions including the impact of resilience and how to identify who is more vulnerable to developing mental health issues.

For many disorders in medicine, experts try to develop a risk calculator to achieve necessary data regarding prognosis and interventions. Parameters may include demographics, a constellation of symptoms, lab values, and other tests. This data set guides some of the decision making, Gur explained.

"At the same time, we realize that people respond to treatments or interventions differently. Some have more resilience and they can better cope with adversity and challenges like medical procedures or diagnoses. That's the long-term goal we're aiming for with this research—we want to develop a resilience calculator. We are looking for ways to assess resilience and the ability to cope with challenges. Then, for those who need a little more help, we can give them that extra support to improve their health and achieve a better outcome."

With her institute's focus on the brain across the lifespan, Gur is also

studying resilience in expecting mothers with Michal A. Elovitz, MD, a maternal fetal medicine physician and director of the Maternal and Child Health Research Center in the department of Obstetrics and Gynecology. The goal of this research is to better understand the biological mechanisms underlying the transmission of stress to unborn children, and any related brain and behavior outcomes. Gur, Elovitz, and their team will follow mothers during pregnancy, measuring their stress and resiliency, and then they'll continue to follow up with the children on developmental parameters.

## **Preliminary results**

While still in the beginning stages of data collection, early results from the resilience research show how the global stressor of the pandemic is impacting people.

Overall, people are fairly altruistic—they worry more about others getting COVID-19, such as family members, than themselves. This pattern was consistent throughout all ages, but as people age they do worry more about themselves, though still not to the extent to which they worry about others.

The researchers also tested gender differences. Women were more worried about COVID-19-related issues, except for financial concerns, which is comparable between genders. While most responders (about 90 percent) were more worried about getting COVID-19 than financial burdens, those who lost their job (about 12 percent) worry twice as much about financial burden than about getting COVID-19.

The resilience measure showed robust effects. Higher resilience traits were associated with less COVID-19-related worries and, importantly, less likelihood of depression and anxiety.

The early findings in the study of expectant mothers show that Black mothers are disproportionately affected from COVID-19-related worries, aligning with the [racial disparities of virus](#). Early results show that Black mothers have more feelings of anxiety and depression, are more concerned with financial burdens due to the pandemic, and are more worried about dying from COVID-19. On the other hand, they had higher resilience scores when it came to rates of emotional regulation and self-reliance.

"Resilience is a critical part of medical care," Gur said. "Those with higher self-reliance often fare better. If we can better understand how resilience and [stress](#) impacts people, we'll be able to preventatively help boost [resilience](#) for patients during this critical time and beyond."

**More information:** COVID-19 Resilience Survey:  
[COVID19resilience.org](https://COVID19resilience.org)

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