



DATA INSIGHTS & IMPACT REPORT

# MENTAL HEALTH UPDATE:

Fear and Uncertainty in the Age of COVID-19



# INTRODUCTION

On January 21, the United States announced its first confirmed case of coronavirus (COVID-19). Seven weeks later, President Trump declared a U.S. National Emergency and, within days, states began implementing stay at home orders and millions of schools and businesses closed their doors. The lives of Americans took a sharp and unpleasant turn almost overnight, accompanied by a barrage of daily announcements about safety protocols, hospital shortages, death tolls, layoffs, and financial meltdown.

What has all of this meant for the mental and emotional health of Americans? Data from our Total Brain Platform participants shows an alarming spike in levels of stress, anxiety, negativity, cognition, depressive mood, and addiction. This Insights & Impact Report discusses that data, the possible contributing factors and the potential mental and physical health outcomes that could result if those factors are left unaddressed.





## SPIKE IN STRESS, ANXIETY & DEPRESSED MOOD

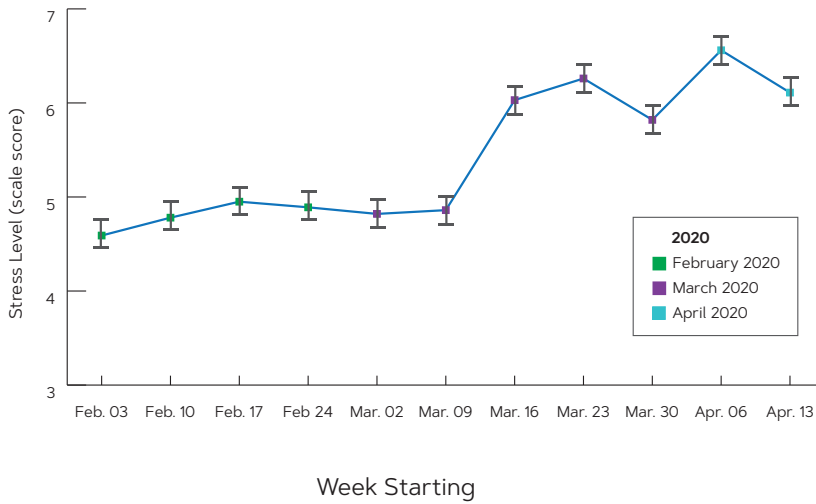
Human beings are vastly adaptable to change and disruption, but beneath the surface, they may struggle to find mental and emotional equilibrium. This is reflected in the magnitude of change shown in Total Brain participants' responses. Feelings of stress rose 38 percent, anxiety 54 percent and depressive mood 61 percent. In addition, conscious negativity bias increased 23 percent, resilience declined 5 percent, and complex cognitive performance (the ability to plan) fell 15 percent.

The number of participants flagging positive for general anxiety disorder, depressive disorder, PTSD, and addiction doubled over the measurement period.

Interestingly, at a time of widespread isolation from one another, the extent to which people sought out and derived enjoyment from socially connecting with others increased 6 percent, mainly throughout February and early March, and remained high through mid-April.

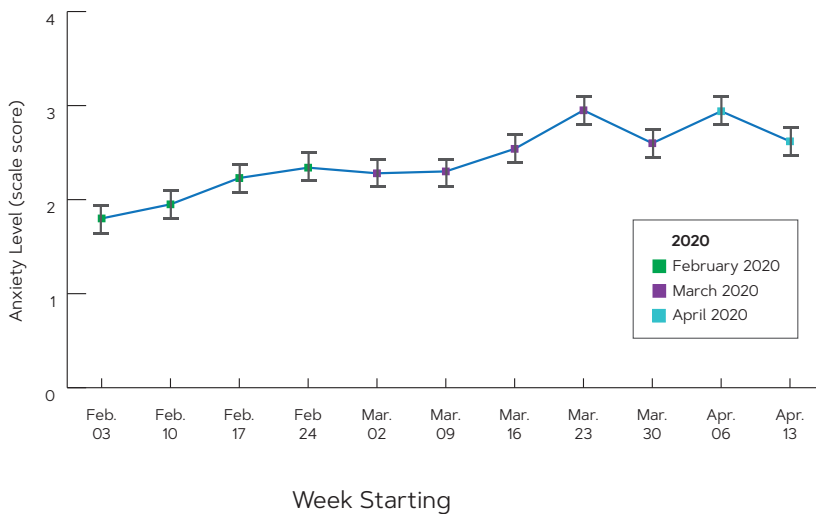
## Americans 38 Percent More Stressed

Stress levels of Americans has increased 38 percent since the first week of February, with a spike originating in the second half of March 2020.



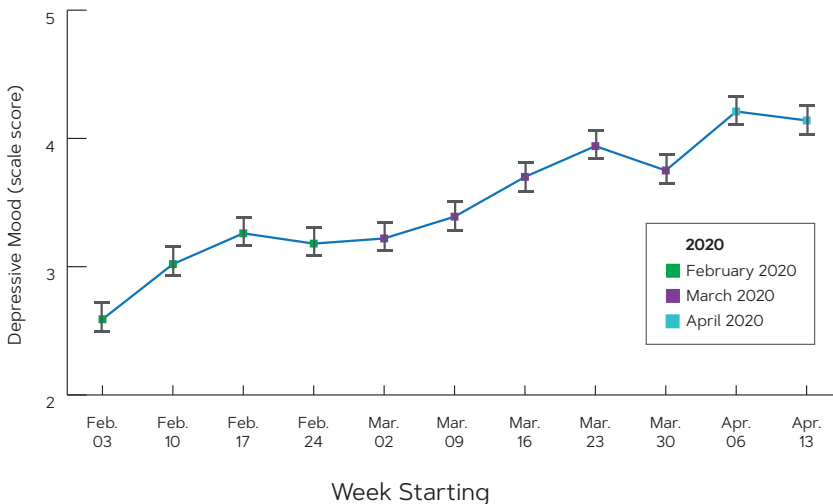
## Anxiety Levels Up 54 Percent

Anxiety levels among Americans increased 54 percent from February to April.



## Americans Feeling Down

Feelings of depressive mood increased 61 percent between February and April.



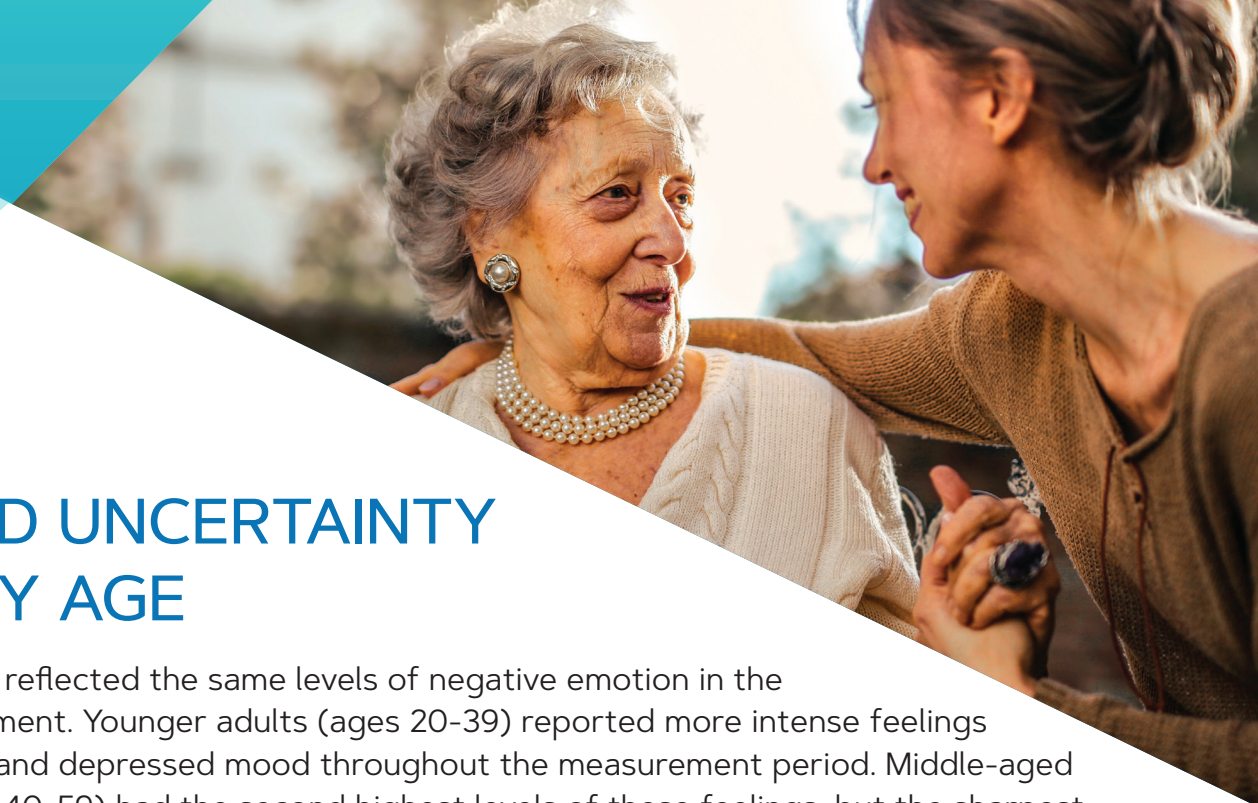


## Measuring The Brain

Total Brain measured these factors using standardized, scientifically based digital tasks and questions asked during all assessments (not developed specifically for the virus onset) to detect a person's conscious experience of their brain functions. The stress, anxiety, depressive mood control questions focused on:

- Behavioral, cognitive, and emotional responses to situations related to stress and coping
- Autonomic nervous system over-activity (e.g. experiencing a racing heart or sweaty palms in everyday situations)
- Thoughts of worry or fear
- Feelings and experiences over the past week, with emphasis on motivation

Not surprisingly, the sharp rise in stress, anxiety and depressed mood corresponded heavily with the rise in COVID-19 cases in the U.S., as well as the implementation of stay-at-home recommendations and restrictions. Mean scores on all three factors measured close to average until March 9 and then rose steadily over the following weeks.



## FEAR AND UNCERTAINTY VARIES BY AGE

Not all age groups reflected the same levels of negative emotion in the Total Brain assessment. Younger adults (ages 20-39) reported more intense feelings of stress, anxiety, and depressed mood throughout the measurement period. Middle-aged participants (ages 40-59) had the second highest levels of these feelings, but the sharpest increase over the measurement period. Older adults (60 and older), meanwhile, showed the lowest scores for most categories, but the highest for nonconscious negativity.

Those over 40 years of age demonstrated the greatest increase in depressive disorder, PTSD and addiction since early February, with a significant 4.7-fold increase in the number of people 60 and older experiencing symptoms of PTSD during this time.

These age breakdowns are consistent with average mean scores before the COVID-19 pandemic. In other words, the youngest group already started with the highest stress level as a normal average. The increase among all age groups, however, demonstrates a shared sense of negative emotion across all participants.

We plan to conduct further analysis of age-related differences and share additional patterns as we collect data over the span of the epidemic.

### Ages 20-39

Younger adults reported more intense feelings of stress, anxiety, and depressed mood.

### Ages 40-59

Middle aged participants had the second highest levels of stress, anxiety, and depressed mood, but the sharpest increase over time.

### Ages 60+

A significant 4.7-fold increase in the number of people 60 and older experienced symptoms of PTSD during this time.



## BRAINS ON OVERDRIVE

When speculating the reasons for the spike in stress, anxiety, and depressed mood, one must first consider the way our brains are designed.

Human beings have two brain networks: the threat response network and the reward network. The threat response network detects potential dangers and alerts the body so it can prepare to respond. This is commonly called our “fight or flight” response. The threat response network reacts automatically and unconsciously and may trigger bodily changes such as sweaty palms and increased heart rate, along with a general sense of fear and alarm.

The brain’s reward network, in contrast, works calmly and consciously to meet our needs and fulfill our desires. It’s most useful in helping us plan and execute conscious tasks, such as creating a wonderful meal or designing a new program or product for businesses.

The two brain networks complement each other and work cooperatively to keep us 1) alive and safe and 2) fulfilled and controlled. For instance, you wouldn’t want to complete the reward-network goal of climbing a mountain if your threat response network alerted you there was a bear blocking your path.

Unfortunately, that system gets short-wired in circumstances of sustained, real, or perceived danger. The threat response network can get stuck in overdrive and hamper our reward network’s ability to function logically and pursue our greater well-being. Like a car engine stuck in fourth gear, this constant “firing” of threat response impulses makes us feel chronically alert and on edge, which is reflected in negative thoughts, feelings, and decisions.



## OUR CURRENT FEAR AND UNCERTAINTY

Many times, the perception of a real threat (in this case, COVID-19) is combined with an underlying fear of unknown dangers. The uncertainty and dread increase the likelihood and severity of negative emotions.

This anticipatory threat response was measured in a recent Finnish study that tracked brain activity of people watching horror movies<sup>1</sup>. Whereas the appearance of the actual threat triggered an immediate and extreme flight response, the brain's threat response network began firing much earlier, as soon as the viewer began anticipating a threat. More importantly, it continued preparing for action throughout the entire movie, taking over the regions of the brain involved in emotion processing, threat evaluation and decision making.

Our current situation may not feel exactly like a horror movie, but we are experiencing a sustained level of uncertainty and fearful anticipation of the unknown that has caused heightened activity in our threat response network. Some of these uncertainties include:

### Loss of Jobs and Income

Fear of losing a job or losing a business can cause enormous levels of stress, anxiety, and depressive thought. A COVID-19-focused survey by Pew Research Center found that 33 percent of lower-income Americans and 29 percent of those who have experienced job or income loss were experiencing high levels of emotional distress, compared to 17 percent of high-income households and 21 percent of those with steady income.<sup>2</sup>







## Health Fears

The same Pew survey found that 32 percent of those who view the virus as a major threat to their health fell into the high-distress category, compared to 16 percent who believe the virus is not a threat to their health.



## Changes in Routine

Everyone is experiencing major changes to his or her daily lives. Children who once headed to school are now learning at home, online. Adults also must work from home, manage new technology and workspaces, or wear protective gear and social distance on the job. No one is shopping, working, or socializing the same way. All this sudden and unwelcome change can cause stress and anxiety as we try to adapt and cope, while feeling uncertain about how long the changes will last.

## Disruptions in Coping Strategies

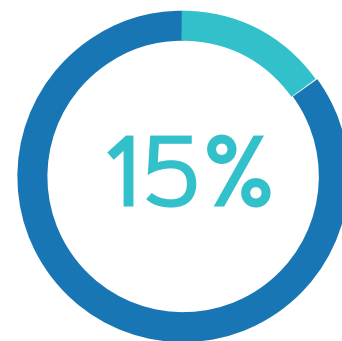
Positive mental health relies on learning effective practices to cope with stress and loss. The COVID-19 pandemic has removed some of those healthy coping strategies, making people more vulnerable to feelings of being out of control and anxious. For instance, those who exercise daily at a local gym to reduce stress, anxiety, and depression cannot do so if the gym is closed due to the virus. Others who attend church services or support groups to find inner peace and outer community support must go without.

# POTENTIAL OUTCOMES

Total Brain data reveals three early outcomes of this prolonged crisis: increased stress, anxiety, and depressed mood. However, we anticipate cascading impacts to the mental health of Americans that could include:

## Reduced focus and sustained attention

When we're anxious and afraid, we experience difficulty completing complex tasks. This is reflected in Total Brain assessment data. Participants took 15 percent longer to complete a complex maze task in April than they did at the beginning of February. As a result, companies across the nation may witness a decrease in productivity since the coronavirus crisis began. Employees may have difficulty concentrating; take longer to complete tasks; have difficulty thinking, reasoning, and deciding; put off challenging work and have difficulty juggling tasks or responsibilities.



Took 15% longer to complete tasks

## Impacted memory

People under stress perform more poorly on memory tasks, like remembering names or phone numbers.

## Lack of interest and social interaction

So far, Total Brain scores measuring social interaction have not declined substantially, as individuals seem to be initiating remote social contact with their friends and colleagues. However, social isolation can contribute substantially to depressive feelings, sadness and hopelessness, having a detrimental impact on mental well-being.



## Irritability

Stress strongly correlates with irritability, and as our relationships with family members, neighbors and even fellow citizens experience unusual pressures, we would expect to see normal reserves of patience and cooperation decline.



## Reduced resilience

Resilience allows us to bounce back when something bad happens. Because the current crisis has removed many of our coping strategies and interfered with positive self-talk, resilience has already declined by five percent, according to Total Brain data. We may see resilience continue to decline in the coming months as the pandemic continues to take its toll.

## Increase in negativity bias

Negativity bias – the tendency to see the “cup half empty” rather than the “cup half full” – can rise in times of uncertainty and discouragement. This may become more pronounced for those whose “input,” such as the media and messages they see, hear, and absorb each day, leans more negative than positive.

## Increased drug and alcohol use

As mentioned, the number of Total Brain respondents flagging positive for addiction (i.e. a problematic level of use) increased for middle-aged and older adults, almost tripling for those 60 and older. This correlates with reports from multiple news outlets like the Washington Post<sup>3</sup>, which reported an increase in U.S. alcohol consumption since the stay-at-home orders began, with reasons ranging from boredom to fear and anxiety. The New York Times recently covered the issue of drug and alcohol relapses related to support groups closing their doors, leaving addicts without helpful distraction, support and accountability.<sup>4</sup> We anticipate this could be a discouraging mental health outcome of the coronavirus if we cannot help people find better ways to cope with their emotions and addictions.

# 3X

Alcohol and drug use nearly triples for Americans 60+

# THE MENTAL HEALTH INDEX

Total Brain created the Mental Health Index to allow the public and corporations to measure mental health progress and performance against a valid national benchmark. The Mental Health Index: U.S. Worker Edition contains data drawn from a weekly randomized sample of 500 working Americans taken from a larger universe of Total Brain users that includes workers from all walks of life and regions. The data is not survey data by nature. It comes from a mix of validated tasks and questions that are part of a unique neuroscientific assessment of the Total Brain.

[View the Mental Health Index](#)

## METHODOLOGY

The participant assessments used to compile the Mental Health Index are taken weekly from Feb. 3 to April 19. The assessment questions are identical to Total Brain's standard weekly assessments. Total Brain collected responses across the entire Total Brain U.S. user base, from all who voluntarily participated. Total Brain performed statistical analysis of the data from a random sampling of up to 500 users each week since February 2020. Sample is drawn from a universe of US workers that include most US regions, job levels, occupations, industries and types of organizations (public vs. private).

## ABOUT ONE MIND

Launched in 2017, [One Mind at Work](#) is a global coalition of leaders from diverse sectors who have joined together with the goal of transforming approaches to mental health and addiction. One Mind at Work now includes more than 25 global employers and 18 research and content partners. The coalition covers more than 3.5 million people under its charter.

**ONE MIND**  
**atWork**

# THE TOTAL BRAIN SOLUTION

The Total Brain platform offers clients a scientifically proven method for monitoring and supporting mental health and wellness. By building self-awareness and providing tools for transforming fear into opportunity, founder Dr. Evian Gordon, MD, Ph.D., a leading neuroscientist, and his team of scientists, technologists and strategists empower participants to measure, improve and manage their mental health like their physical health.

Our participants take assessments every 30 days to measure their 12 core brain capacities and screen for the risk of seven common mental health conditions. Then each individual receives a customized training plan including online cognitive, emotional and breathing exercises – all designed to improve mental fitness. Those practices are especially critical during times of increased stress, fear, and uncertainty, such as now.

Since 2000, Total Brain has partnered with more than 50 companies to boost productivity and insight, encourage healthy behaviors and lower mental health costs. By measuring, evaluating, and comparing assessment data during the COVID-19 outbreak, we seek to better inform and equip both employers and employees.



[www.totalbrain.com](http://www.totalbrain.com)



[Linkedin.com/company/TotalBrain](https://www.linkedin.com/company/TotalBrain)



[@TotalBrainInc](https://www.linkedin.com/company/TotalBrainInc)



[Facebook.com/TotalBrainInc](https://www.facebook.com/TotalBrainInc)

## REFERENCES

1. NeuroImage. 2020. Dissociable neural systems for unconditioned acute and sustained fear [Internet]. <https://www.sciencedirect.com/science/article/pii/S1053811920300094?via%3Dihub>
2. Pew Research Center. 2020. Survey of U.S. adults [Internet]. <https://www.pewresearch.org/fact-tank/2020/03/30/people-financially-affected-by-covid-19-outbreak-are-experiencing-more-psychological-distress-than-others/>
3. As Pandemic and Stay-at-home Orders Spread, So Does Alcohol Consumption  
Caren Chesler - [https://www.washingtonpost.com/national/health-science/as-pandemic-and-stay-at-home-orders-spread-so-does-alcohol-consumption/2020/04/02/ad41bc3c-7430-11ea-87da-77a8136c1a6d\\_story.html](https://www.washingtonpost.com/national/health-science/as-pandemic-and-stay-at-home-orders-spread-so-does-alcohol-consumption/2020/04/02/ad41bc3c-7430-11ea-87da-77a8136c1a6d_story.html)
4. With Meetings Banned, Millions Struggle To Stay Sober On Their Own  
Jan Hoffman - <https://www.nytimes.com/2020/03/26/health/coronavirus-alcoholics-drugs-online.html>

