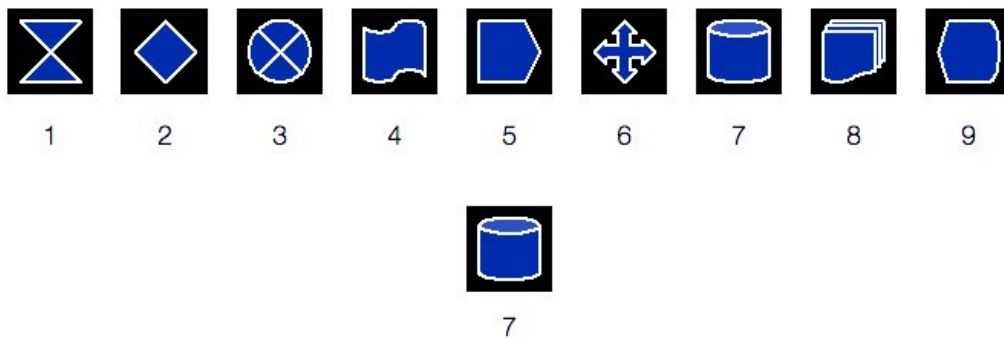


# Pandemic worriers shown to have impaired general cognitive abilities

December 1 2021

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Yes



No

Use the Right and Left Arrow keys to respond.

An example of the cognitive testing. Credit: Kevin Da Silva-Castanheira

The COVID-19 pandemic has tested our psychological limits. Some have been more affected than others by the stress of potential illness and the confusion of constantly changing health information and new

restrictions. A new study finds the pandemic may have also impaired people's cognitive abilities and altered risk perception, at a time when making the right health choices is critically important.

Scientists at McGill University and The Neuro (Montreal Neurological Institute-Hospital) surveyed more than 1,500 Americans online from April to June, 2020. Participants were asked to rate their level of worry about the COVID-19 pandemic and complete a battery of psychological tests to measure their basic cognitive abilities like processing and maintaining information in mind. The data were then compared to results of the same tests collected before the pandemic.

For example, participants completed an information processing test where they were asked to match pairs of digits and symbols according to a fixed rule. Participants' risk attitudes were measured using an economic decision task where they made a series of hypothetical choices between a 'certain' option (e.g., a sure win of \$75), and a 'risky' option (e.g. a 25 per cent chance of winning \$0 and a 75 per cent chance of winning \$100).

The researchers found that those who experienced more pandemic-related worry had reduced information processing speed, ability to retain information needed to perform tasks, and heightened sensitivity to the odds they were given when taking risks. The pandemic group performed more poorly on the simple cognitive tasks than the pre-pandemic group. Also, participants in the last wave of data collection showed slower processing speed, lower ability to maintain goals in mind, and were more sensitive to risk than those in the first wave.

Interestingly, the study found that pandemic worry predicted individuals' tendency to distort described risk levels: underweighting likely probabilities and overweighting unlikely probabilities. This suggests that worry related to COVID may have affected people's decision-making

style, which is crucial as it may influence people's decisions about getting a COVID-19 vaccine.

"The basic cognitive abilities measured here are crucial for healthy daily living and decision-making," says Kevin da Silva Castanheira, a graduate student in McGill's Department of Psychology and the study's first author. "The impairments associated with worry observed here suggest that under periods of high stress, like a global pandemic, our ability to think, plan, and evaluate risks is altered. Understanding these changes are critical as managing stressful situations often relies on these abilities."

"The impact of stress and of worry on cognitive function are well known, but are typically studied in the laboratory setting," says Dr. Madeleine Sharp, a researcher and neurologist at The Neuro and study author. "Here, we were able to extend these findings by studying the effects of a real-world stressor in a large sample. An important future direction will be to examine why some people are more sensitive than others to stress and to identify coping strategies that help to protect from the effects of stress."

The study was published in the open access journal *PLOS ONE*.

**More information:** Kevin da Silva Castanheira et al, The impact of pandemic-related worry on cognitive functioning and risk-taking, *PLOS ONE* (2021). [DOI: 10.1371/journal.pone.0260061](https://doi.org/10.1371/journal.pone.0260061)

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