

# Mild COVID-19 can cause long-term cognitive losses, finds study

July 24 2024, by Maria Fernanda Ziegler

---



Credit: Unsplash/CC0 Public Domain

Memory loss and attention deficit are frequent complaints of people who have survived severe COVID-19, but these and other cognitive impairments have also been observed in mild cases more than 18 months

after the start of the infection, according to a study by researchers at the University of São Paulo (USP) in Brazil.

The study is [published](#) in the journal *BMC Psychology*. The findings highlight the need for more comprehensive rehabilitation to address the enduring cognitive impacts of long COVID, the authors write.

Data collected from 302 volunteers pointed to [cognitive impairment](#) in 11.7% of mild patients, 39.2% of moderate patients and 48.9% of severe patients.

"Although the damage done by the disease in terms of [memory loss](#), attention deficit and slow processing increases in proportion to its severity, the same problems affect a far from negligible number of people—around 100 in our study—who had mild or moderate COVID," said Antônio de Pádua Serafim, first author of the article and a professor at the Institute of Psychology (IP-USP).

The results of the study evidence the potential impact of neuroinflammation due to infection by SARS-CoV-2.

"Memory loss and attention deficit are known to be associated with post-[intensive care](#) syndrome due to intubation under deep anesthesia. Some of the data analyzed in the study, however, was from patients who didn't require intensive care or didn't even have sufficient symptoms to be hospitalized and nevertheless exhibited memory loss and attention deficit. The findings therefore opened our eyes to the question of neuroinflammation due to COVID-19," Serafim said.

Memory and attention are important cognitive functions that affect people's day-to-day lives. Reflecting this, participants in the study with poor memory and attention test scores reported difficulties with recalling words or performing routine activities, such as forgetting pots on the

stove or failing to pick children up from school.

"Hierarchically speaking, attention is the primary function in all [mental activity](#), and this explains why attention deficit has such a huge impact on people's daily lives. High-quality attention is required to think and act in various ways at the same time. Impairment of attention in turn affects memory.

"In some cases, attentional activity is so dispersed that each new stimulus [or impending activity] dissolves, so that the person can't remember what they were doing. This also affects processing activity, which involves rapid decision-making based on information," he said.

## **Cognitive rehabilitation**

According to Serafim, all the evidence has shown for some time that SARS-CoV-2 can affect the central nervous system as well as the lungs, kidneys, heart and muscles, but the extent of the damage it may cause is poorly understood.

"We don't know if cognitive impairment due to COVID-19 is permanent, and we're currently evaluating ways to intervene in this process," he said.

In partnership with other researchers at USP, Serafim is developing programs to try to mitigate the cognitive losses caused by COVID-19. The aim is to find out whether techniques such as neurostimulation and neurofeedback can attenuate or reverse memory loss and attention deficit.

"Both are non-invasive techniques that aim to improve brain functions by means of neuromodulation, which can stimulate the connections among neurons in the brain [synapses]. We have only [case studies](#) so far.

For example, in the case of a physician who was in the [intensive care unit](#) for 34 days, we conducted a neurofeedback protocol often used to study patients with [attention deficit](#) disorder, and he made a good recovery. But that was an isolated case," he said.

"Based on the knowledge we've acquired so far regarding cognitive stimulation and rehabilitation techniques, I believe it may be possible to obtain an improvement in neural connectivity by means of brain training to stimulate overall cognitive ability. The severe phase of the pandemic is over, but the sequelae persist. So it's not a closed case.

"Many people were infected, and many have sequelae of this kind. However, we don't have an effective program to intervene not only in the emotional aspects but also in the cognitive difficulties resulting from COVID-19."

**More information:** Antonio de Pádua Serafim et al, Cognitive performance of post-covid patients in mild, moderate, and severe clinical situations, *BMC Psychology* (2024). [DOI: 10.1186/s40359-024-01740-7](#)

Provided by FAPESP

Citation: Mild COVID-19 can cause long-term cognitive losses, finds study (2024, July 24) retrieved 24 July 2024 from <https://medicalxpress.com/news/2024-07-mild-covid-term-cognitive-losses.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.