



## Long-lasting headache in Covid

Fabiane Caxias de Paula Carvalho; Gabriel de Almeida Monteiro; Leticia Soares Teles de Menezes;  
Larissa Silva de Oliveira Matos; Ana Flávia Resende Santos; Lorena do Carmo De Souza Martins;  
Odeon Parente Aguiar Júnior; Rodrigo Franklin Pinheiro Almeida

Universidade Federal do Ceará, Sobral - CE - Brazil.

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### Introduction

With the widespread use of vaccines, most of the COVID-19 cases recorded today are mild and moderate. This does not mean, however, that it is now possible to treat COVID like any other cold: many patients have been experiencing the so-called "long-lasting COVID", a condition in which one or more symptoms persist even after infection. And headache is one of the symptoms that, during the acute phase of the disease, usually appears in the first few days and can persist for days, weeks and even months. The characteristics, pathophysiology and treatment of prolonged COVID headache are not fully understood. However, growing evidence is defining the characteristics of this new condition, particularly about clinical features, some pathophysiological mechanisms and early treatment recommendations.

### Objectives

Discuss long-standing headache and its characteristics related to COVID infection.

### Methods

This is a narrative review of the main studies on the subject published in the PubMed, Science Direct and Cochrane databases up to the year 2022, without language restriction.

### Results

Headache appears as oppressive pain in the upper/frontal part of the head, that may be perceived on both sides and affects between 14 and 60% of patients during the acute phase of COVID-19. It is more prevalent in middle-aged women. With a prevalence of 18%, it appears to be the fifth most common symptom in patients with prolonged COVID, after fatigue, dyspnea, myalgia and cough. The National Institute for Health and Care Excellence has distinguished between continuous symptomatic COVID-19 and post-COVID-19 syndrome for people who experience symptoms, respectively, between 4 and 12 weeks and more than 12 weeks after the beginning of the acute illness. The International Headache Classification uses a headache duration longer than 3 months after acute infection for the diagnosis of "Chronic headache attributed to systemic viral infection". Regarding clinical presentation, long COVID headache can manifest with a clinical presentation like that of new daily persistent headache, classified as NDPH (New Daily Persistent Headache) in ICHD-3 (The International Classification of Headache Disorders), due to its prominent temporal relationship and resistance to treatment. However, not all long COVID headaches have a daily frequency and can be affected by the severity of the disease and the use of analgesics. They can appear as intermittent or chronic daily headaches. Most patients complain of various symptoms in addition to headaches, and the symptoms (and therefore the long COVID phenotype) can change according to the type of virus variant (Alpha, Delta, Omicron). Fever, cough and loss of taste have been reported as common symptoms for the Alpha variant, while coryza, headache and fatigue have been reported more frequently for the Omicron type. Furthermore, it can be accompanied by concomitant symptoms of long COVID, such as fatigue, cognitive dysfunction and dizziness, as well as hyposmia and insomnia or other sleep deficiencies. Another factor associated with prolonged COVID headache is treatment-resistant headaches during the acute phase of the infection. The prolonged COVID headache does not have a specific clinical presentation, so the diagnosis of such a headache is mainly a diagnosis of exclusion.

### Conclusion

Due to the limited information available on long COVID headaches, further large population-based multicenter studies are needed to: fully characterize the headache phenotype specifically of prolonged COVID headache (not acute COVID headache); establish long-term disability and impact on patient quality of life; and determine the risk of chronicity pre-existing headaches.

**Keywords:** Covid; Long Headache; Diagnosis.