

Press Release

Geneva, 12 July 2021

COVID-19

LONG COVID: FOUR OUT OF TEN PEOPLE STILL REPORT SYMPTOMS MORE THAN SEVEN MONTHS AFTER INFECTION

A study by Geneva University Hospitals (HUG) and the University of Geneva (UNIGE) on the long-term follow-up of symptomatic individuals who tested positive for SARS-CoV-2 has revealed that 39% of patients report residual symptoms seven to nine months after contracting the virus. These results, available in the journal [*Annals of Internal Medicine*](#), also show a persistence of symptoms more common in women and in people who presented several symptoms in the days following infection. Symptoms can fluctuate over weeks to months, however, in general their intensity tends to decrease with time.

The SARS-CoV-2 virus, responsible for the COVID-19 disease, can cause symptoms that last for several weeks to months. The most common are persistent fatigue, shortness of breath, cardiac symptoms, neurologic symptoms and psychiatric manifestations. They vary in their presentation and intensity and can also fluctuate over time.

The terms “Long COVID”, “PASC” for *Post-Acute Sequelae of SARS-CoV-2 infection*, and “post COVID-19” are used to qualify the persistence of these symptoms beyond four to 12 weeks of infection. In order to better understand them, to assess their impact on patients' quality of life and to specify their duration, the HUG and UNIGE have carried out a long-term follow-up study of symptomatic patients who consulted at the HUG between 18 March and 15 May 2020 and tested positive for SARS-CoV-2.

Persistence of symptoms

The study follows participants over three time points: an initial outpatient consultation via telemedicine over the first 10 days following diagnosis, a second follow-up at 30 to 45 days after the infection, and a third follow-up in the form of a questionnaire between seven and nine months after the infection. Patients with serious complications requiring hospitalization are not included in the study, to assess persistent symptoms in an outpatient setting in patients mostly in good health pre-COVID.

Of the 629 participants in the initial cohort of the study, 410 completed the follow-up at seven to nine months after the infection, and 39% of them reported symptoms that persisted seven to nine months after diagnosis. Fatigue (20.7%) was the most common symptom, followed by loss of taste or smell (16.8%), shortness of breath (11.7%) and headaches (10%). These results are comparable to international studies of the same type, and Dr Mayssam Nehme, Senior Resident in the Division of Primary Care Medicine at the HUG and first author of this work, specified that “this is one of the first longitudinal prospective outpatient studies evaluating post-COVID symptoms with such a large number of participants”.

Categories at risk

The study reveals a trend of long-term symptoms associated with gender. Dr Mayssam Nehme notes that “the incidence seems to be higher in women, especially for fatigue, shortness of breath and headaches. All age groups are affected, including the young and healthy”. The prevalence of certain symptoms varies among age groups: for example, 40-60 year olds are more prone to muscle pain.

People who developed more COVID-19 symptoms in the acute phase of the disease, namely the days following infection, are more likely to develop persistent symptoms. Surprisingly, symptoms fluctuate over time. “In fact, some people reported their symptoms disappearing after 30 to 45 days, and then became symptomatic again seven to nine months after the infection”, she explains. The cause of these variations remains unexplained, but is the subject of various hypotheses being studied, according to the researchers.

A slow recovery

37% of people with persistent symptoms reported their disappearance after 30 to 45 days and an additional 19% seven to nine months after the infection indicating a remission in 56% of cases.

Although mild to moderate, the symptoms nevertheless affect patients' quality of life and their daily activities. “People who were in optimal shape before their infection are clearly no longer in such a shape afterwards. This feeling of no longer being able to perform at maximal or usual capacity, added to the feeling of discouragement caused by a slow progress, are particularly difficult to endure” explains the study director, Prof. Idris Guessous, Head Physician of the Division of Primary Care Medicine and epidemiologist at the UNIGE Faculty of Medicine's Department of Community Health and Medicine.

Except for headaches, the intensity and severity of symptoms decrease over time. “When evaluating the severity of their symptoms, the majority of participants in our cohort reported mild to moderate intensity”, adds Prof. Idris Guessous.

Improved follow-up

The work in this study provides essential information for the recovery of people affected by this persistent form of COVID-19. "Primary care physicians should remain the first line in ensuring the long-term follow-up of their COVID-19 patients, and this study will help them to anticipate and better understand the manifestations and evolution of this disease", Guessous continues. His team and the HUG have also established protocols designed for primary care physicians for the treatment of patients as well as information on Long COVID intended for patients (see references below).

<https://www.hug.ch/sites/interhug/files/structures/coronavirus/guidelines-postcovid-pourmedecintraitants.pdf>.

<https://www.hug.ch/coronavirus-maladie-covid-19/long-covid>

An e-calculator for persistent symptom risk

The research team has developed a risk calculator for persistent symptoms after a confirmed diagnosis of COVID-19. The purpose of this calculator is to inform the public of their likelihood of presenting COVID-19-related symptoms seven to nine months after a confirmed diagnosis. It is available in French, English and Spanish on <https://longcovidcalculator.com/>.

For more information

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The HUG: Care, Teaching, and leading-edge Research

The Geneva University Hospital (HUG) comprises [eight public hospitals and two clinics](#). Their missions are to provide health care to the community in all medical specialties, to help train physicians and health professionals, and to conduct medical and clinical research. The HUG operate as a national reference centre for [influenza](#), [emerging viral infections](#), [meningococcus](#), and transplant immunology, and are the [national reference laboratory for histocompatibility](#). They are also a WHO Collaborating Centre [in six areas](#), as well as [Centres of Excellence](#) in a number of sectors. The HUG treat 280,000 patients each year, with a capacity of 2,109 hospital beds, and employ 13,557 people.

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About the University of Geneva

The University of Geneva, Switzerland, was founded in 1559 by Jean Calvin and Théodore de Bèze and ranks amongst the top 60 best universities in the world. It enjoys worldwide recognition and develops an ever-strengthening international network. The University of Geneva welcomes about 17'000 students in its nine faculties teaching Sciences, Medicine, Humanities, Economics and Management, Social Sciences, Law, Theology, Psychology and Educational Sciences, as well as Translation and Interpreting. The University of Geneva fulfils three missions: education, research and knowledge-sharing. It is a member of the League of European Research Universities since 2002 and is a founding partner of Campus Biotech, the life science hub for the Geneva Lake region.

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