Treatment of long Covid patients

**Task 8.4:
COVID-19 related international guidelines, initiatives, projects and information sources**
– Róbert Láng (HU)

REF meeting

24th April, 2023

Long COVID: The Next Chapter in the COVID-19 Pandemic

Post COVID-19 condition, also known as long COVID, refers to **long-term symptoms that some people experience after they have had COVID-19**.

These symptoms might persist from their initial illness or develop after their recovery. They can come and go or relapse over time.

The most common symptoms associated with post COVID-19 condition include fatigue, breathlessness and cognitive dysfunction (for example, confusion, forgetfulness, or a lack of mental focus or clarity).

At least 3 months after a patient falls ill with COVID-19

Post COVID-19 condition is usually diagnosed by a healthcare provider **at least 3 months after a patient falls ill with COVID-19**. This 3-month period allows healthcare providers to rule out the usual recovery period from an acute illness. Sometimes this recovery period can be long, especially if someone is very sick.

Symptoms should last for at least 2 months from when someone first falls ill for it to be considered as post COVID-19 condition.

We cannot predict how long post COVID-19 condition will last for any given person. Most people experience improvement in their symptoms, but we know that lingering symptoms can last from weeks to months. Currently, it remains impossible to predict how long post COVID-19 condition may last for any given person.

SARS-CoV-2 infection | Post-acute COVID-19 | Post COVID-19 syndrome

0 week | 4 weeks | 12 weeks | ?
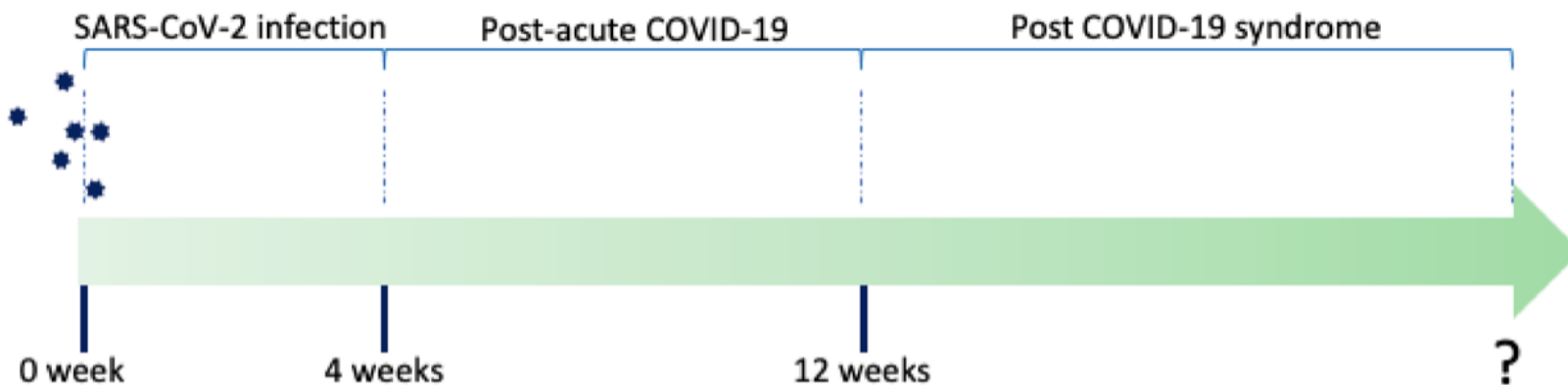
10–20% of people infected by SARS-CoV-2 - long COVID

Studies show that around 10–20% of people infected by SARS-CoV-2 may go on to develop symptoms that can be diagnosed as long COVID.
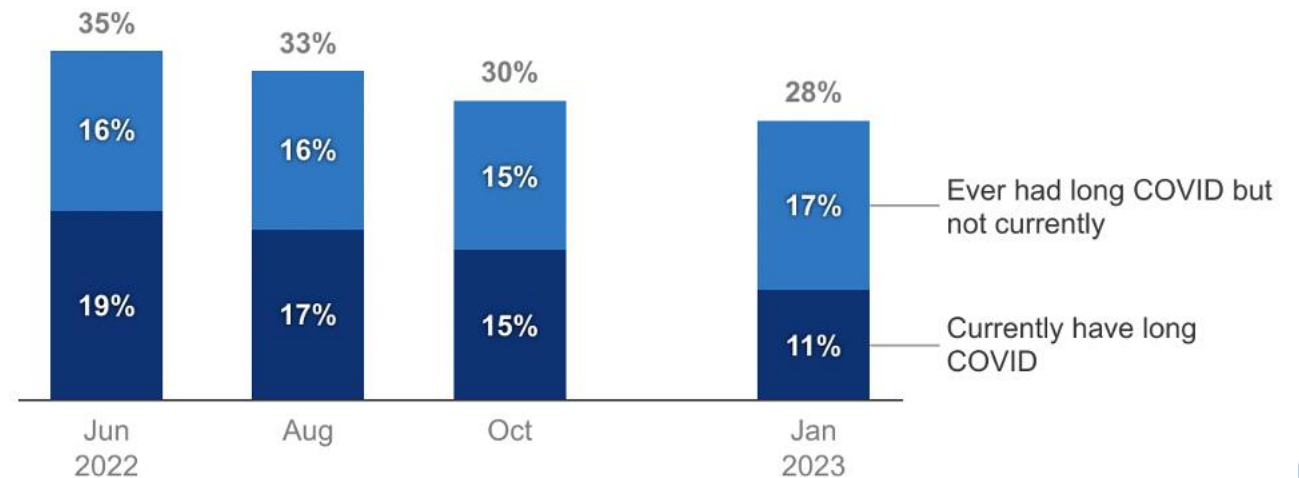
Although exact numbers of those living with the condition are uncertain.

Long COVID: What Do the Latest Data Show?

Alice Burns Jan 26, 2023

Among People Who Have Had COVID, the Percentage who Currently Have Long COVID is Declining

Percentage of people reporting that they currently have or ever had long COVID among those who have had COVID as of January 16, 2023

NOTE: The Pulse Survey, an experimental survey conducted by the Census Bureau and National Center for Health Statistics, asked respondents whether they had any symptoms of COVID that had lasted longer than 3 months. This figure reports the findings as of 6/13/2022, 8/8/2022, 10/17/2022, and 1/16/2023.
SOURCE: National Center for Health Statistics. Post-COVID Conditions. Data accessed Jan 26, 2023. Available from: https://data.cdc.gov/d/gsea-w83j.

Muri, J., Cecchinato, V., Cavalli, A. *et al.* Autoantibodies against chemokines post-SARS-CoV-2 infection correlate with disease course. *Nat Immunol* **24**, 604–611 (2023). https://doi.org/10.1038/s41590-023-01445-w

New research has found **molecular signature differences** in the blood of patients who fully recover from Covid-19 and those who develop long Covid.

The study, which involved Cardiff University, examined blood samples from Covid-19 patients at different stages of the disease, including early stages and patients with long Covid. It highlighted **major differences in the immune responses between those who recovered and those who developed long-term complications**.

Professor Bernhard Moser from Cardiff University's School of Medicine who was part of the research team said: "The reason why some Covid-19 patients develop long Covid is currently **not** known but may be multi-factorial. Gaining insight into this disease at a molecular level may open avenues for treatment."

In patients with long Covid, auto-antibodies that work against three distinct types of **chemokines are missing**, suggesting **that lack of their production contributes to chronic inflammation underpinning long Covid.**

Long COVID Europe

Long COVID Europe (LCE) is a European network of Long COVID patient associations run by (current and former) Long COVID patients.

https://longcovideurope.org

contact@longcovideurope.org

LCE was founded because many Long COVID patient organizations were struggling with the same issues.

LCE creates economies of scale by sharing relevant resources, know-how, and contacts with its members.

3 Rs – WHO – Long COVID Europe

In September 2022, WHO/Europe partnered with Long COVID Europe to develop 3 goals – the 3 Rs – jointly calling upon governments and health authorities to focus attention on post COVID-19 condition (long COVID) and those affected by it through greater:

- **recognition and knowledge sharing**, where all services are adequately equipped, and no patient is left alone or having to struggle to navigate a system that is not prepared, or not capable of, recognizing this debilitating condition;

- **research and reporting through data gathering and reporting of cases**, and well-coordinated research, with **full participation of patients** needed to advance understanding of the prevalence, causes and costs of long COVID; and

- **rehabilitation** that is based on evidence and effectiveness, and is safe for both patients and carers.

Long COVID care pathways and structures
- Austrian Institute for Health Technology Assessment, Update; 2022

HTA Austria
Austrian Institute for
Health Technology Assessment
GmbH

aihta

Long COVID care pathways
and structures: an updated
scoping review

Original report published in October 2021

Websites of relevant institutions and care facilities were searched (last update: August 2022).

In addition, experts from the selected European countries (UK, Norway, Belgium, Germany, Switzerland, Italy and Spain) were contacted.

https://eprints.aihta.at/1408/1/HTA-Projektbericht_Nr.135b_Update.pdf

Long COVID care pathways and structures

Based on the updated inclusion criteria, 24 references, including 15 (standardised) guidelines (2 updates and 10 new ones), as well as four reviews and five expert papers from the original report, were considered.

Thirteen of the 15 guideline documents included recommendations for adult patients and nine documents for children and adolescents. Two of the nine documents focused solely on children and adolescents.

The information about existing long COVID care structures was updated for the UK, Belgium, Germany and Italy and newly added for Norway, Switzerland and Spain.

Long COVID care pathways and structures

The included literature recommended that most long COVID-related healthcare should take place in **primary care** (e.g. general practitioners, primary care centres or paediatricians).

Regarding long COVID care for children and adolescents, practising physicians should acknowledge the **parents and caregivers as one of the most important pillars** and support them with all necessary information about the diagnosis and treatment of the disease, as well as useful social and financial support.

"One-stop assessments" where consultations with various specialists and diagnostic tests are concentrated on a single day are particularly recommended for children and adolescents to avoid multiple referrals.

Next to primary care, **self-management** is often recommended to long COVID patients and/or caregivers, including exercising at home, nutritional management and stress reduction, but also participation in long COVID programmes online or via App.

Psychological aspects of post-COVID conditions

Some post-COVID symptoms are in the mental health arena. The most common of these include:

- Anxiety

- Depression or other mood changes

- Concentration or memory problems ("brain fog")

- Sleep disturbance

According to CDC we do not yet know what causes these distressing symptoms, but there are three possibilities for why they may occur:

1. They could be the result of the specific effects of COVID-19 on the brain, the immune system, or other organ systems.

2. They could be the result of traumatic aspects of the experience of having COVID-19.

3. Ongoing psychological symptoms could be the result of despair patients experience from long-term breathing problems or fatigue with no end in sight.

Mental health conditions raise risk of Long COVID - https://www.gavi.org, 14 September 2022, Priya Joi

New data indicates that people reporting depression, anxiety and stress before a COVID-19 infection are 50% more likely to report Long COVID symptoms.

Long COVID symptoms vary between people but they include mental health symptoms – such as brain fog, depression, anxiety and insomnia – as well as physical symptoms such as muscle ache and extreme fatigue.

The researchers posit that inflammation and immune dysregulation could be the link between pre-infection psychological distress and Long COVID in some people.

As the participants were predominantly white, female health workers, the potential to generalise these results are limited, but they are important in understand potential risk factors for Long COVID.

Long COVID and AI

Machine-learning tools use EHR data to find common symptoms among people with **long COVID** and identify condition subtypes
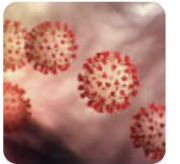

healthitanalytics.com
https://healthitanalytics.com › news · Oldal lefordítása ⋮

New Machine-Learning Model Identifies Long COVID ...
2023. jan. 6. — **A** newly developed machine-learning tool uses EHR data to find common symptoms among people with **long COVID** and identify condition subtypes.

lbl.gov
https://newscenter.lbl.gov › 2023/01/05 · Oldal lefordítása ⋮

Machine Learning Tackles Long COVID - Berkeley Lab
2023. jan. 5. — **Artificial intelligence** software gleans insights from health records to shed light on chronic **COVID** symptoms. Contact Media@lbl.gov.
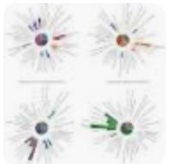
nature.com
https://www.nature.com › articles · Oldal lefordítása ⋮

Machine learning identifies long COVID patterns ... - Nature
Írta: F Wang — **A** machine learning algorithm identifies four reproducible clinical subphenotypes of **long COVID** from the electronic health records of ...

https://www.nature.com › articles · Oldal lefordítása ⋮

Long COVID: major findings, mechanisms and ... - Nature
Írta: HE Davis · 2023 · Idézetek száma: 104 — **A long**-lasting reduction in vascular density, specifically affecting small capillaries, was found in patients with **long**…