

A social and medical examination of Long COVID as a “mass disabling event”: Part 1

Frank Gaglioti
3 April 2023

This is the first of a multi-part series on Long COVID. Part two can be read here, part three here, and part four here.

After three years of the COVID-19 pandemic, the long-term consequences of infection with SARS-CoV-2—called Long COVID or post-acute sequelae of SARS-CoV-2 (PASC)—remain a dire threat to humanity. Long COVID researchers and advocates have correctly referred to the pandemic as a “mass disabling event,” which is ongoing and deepening despite all the lies and propaganda that “the pandemic is over.”

The massive societal impacts of the pandemic are analogous to an iceberg, in which the acute mortality and suffering present on the surface are accompanied by the often hidden but even more numerically immense long-term toll exacted by Long COVID.

The Institute for Health Metrics and Evaluation (IHME) shows that 671 million people have officially been infected with SARS-CoV-2 worldwide, resulting in 6.73 million deaths. Both figures are known to be vast undercounts due to inadequate testing and data tracking systems in most countries. Studies indicate that the majority of humanity has now been infected with COVID-19 and there are over 20 million excess deaths attributable to the pandemic.

An important recent scientific review, “Long COVID: major findings, mechanisms and recommendations” provided a conservative estimate that beyond these acute deaths, a staggering 65 million people are now suffering from Long COVID worldwide. The widely read paper, published in *Nature Reviews Microbiology* in January, was co-authored by Eric Jeffrey Topol and Julia Moore Vogel of The Scripps Research Institute, as well as Long COVID patient-researchers Hannah E. Davis and Lisa McCorkell.

The researchers present a series of devastating statistics that highlight the criminality of what is being unleashed on society by the ruling elites. They note:

At least 65 million individuals around the world have long COVID... the number is likely much higher due to many undocumented cases. The incidence is estimated at 10–30% of non-hospitalized cases, 50–70% of hospitalized cases and 10–12% of vaccinated cases. Long COVID is associated with all ages and acute phase disease severities.

The characteristics of Long COVID still remain elusive due in part to its being associated with over 200 symptoms ranging from inconvenient to debilitating. The most common symptoms include extreme fatigue, difficulty breathing and shortness of breath, pain when breathing, painful muscles, heavy arms or legs, ageusia (loss of sense of taste) or anosmia (loss of sense of smell), feeling hot and cold alternately, and tingling extremities.

The Topol et al. review cites studies demonstrating that COVID-19 can

attack and cause lasting damage to every organ system of the body, in particular the cardiovascular, gastrointestinal, neurological, endocrine, respiratory, and genitourinary systems.

Significantly, COVID-19 can cause cardiovascular, thrombotic (clots) and cerebrovascular disease, type 2 diabetes, myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and dysautonomia (dysfunction of the autonomic nervous system that regulates the body’s internal environment), especially postural orthostatic tachycardia syndrome (POTS) associated with increased heart rate when standing.

The authors conclude that these symptoms can persist for a few weeks, to years, to potentially an entire lifetime, often making it impossible for sufferers to lead a normal life. The review states, “With significant proportions of individuals with long COVID unable to return to work, the scale of newly disabled individuals is contributing to labour shortages. There are currently no validated effective treatments.”

The immense social and medical impacts of Long COVID are the product of the homicidal “let it rip” mass infection policies that have now been implemented by every capitalist government throughout the world. The suppression and distortion of the science of Long COVID—which from the very first wave of coronavirus was known to be a devastating affliction—amount to one of the greatest crimes committed by capitalist politicians and the corporate media throughout the pandemic.

It is clear that Long COVID has accompanied each successive wave of the pandemic, and that it will continue to debilitate a significant portion of society for years to come. This review, as part of the *World Socialist Web Site’s* Global Workers’ Inquest into the COVID-19 Pandemic, will document what is known about the science and impacts of Long COVID, the lessons that should have been drawn from previous post-viral illnesses, and the refusal of world capitalism to address this massive and ongoing social catastrophe.

Identification of Long COVID

Long COVID as a condition was first identified by patients themselves, who were unable to obtain any meaningful treatment. The people who reported Long COVID symptoms during the first wave in 2020 were routinely dismissed as having a psychosomatic condition and ignored. This was in spite of Long COVID being totally predictable, as it is well known that viral and bacterial infections have long-term consequences that can emerge even decades after the initial infection.

A comment published in *Social Science & Medicine* in October 2020, written by professor of Human Geography at the University of Glasgow, Felicity Callard, and Honorary Research Associate at University College London, Elisa Perego, stated, “Thousands of patients collectively made visible heterogeneous and complexly unfolding symptoms: most were not

commonly acknowledged within many healthcare and policy channels in early pandemic months.”

The authors argue that social media played an important role in uniting the growing cohort of patients internationally, enabling them to gain recognition for their condition. “There are strong reasons to argue that Long Covid is the first illness to be made through patients finding one another on Twitter and other social media,” they stated.

Importantly, Callard and Perego challenged the myth that COVID-19 is a mild condition as even in the early stages of the pandemic patients were reporting persistent severe symptoms.

In an online post published in May 2020, Callard took up Britain’s Home Officer Deputy Science Advisor Rupert Shute’s assessment of COVID-19 as “mild.” She wrote, “I have found myself chafing as a patient against the descriptor mild. The adjective can end up both revealing and hiding various logics at a moment in which thousands continue to die every day, world-wide, of a new and brutal disease.”

Perego recently spoke to the *World Socialist Web Site*. She is a principled scientist calling for the global elimination of COVID-19.

Long COVID advocate, immunologist and professor of immunobiology at Yale School of Medicine, Akiko Iwasaki, related in an online forum last August in *Knowable Magazine* “Long COVID: A parallel pandemic” that in the early phase of the pandemic she investigated acute COVID-19, but that she frequently encountered people with persistent symptoms. She said:

We didn’t anticipate so many people becoming ill with long-term consequences. Hospitalized patients who are discharged may have 50 percent of those having long-term symptoms. Whereas a mild Covid or asymptomatic ones may lead to much less prevalence but still in the 10 percent, 20 percent, 30 percent range. So that’s a lot of people.

How many people have Long COVID?

Most of the people who get Long COVID have been relatively healthy and aged between 30-50 years old, often experiencing mild or no symptoms at all when they became infected. Estimates of the number of people with the condition vary greatly, as there is not a universally accepted definition for Long COVID. Last year, *Nature* commented, “So far, there is no agreement on how to define and diagnose long COVID.”

The World Health Organisation (WHO) published a “clinical case definition” in October 2021, but it has not gained approval with patient advocates or researchers. Academic studies continue to use a range of criteria to define the condition.

An opinion piece published in August in *The Conversation* by Betty Raman, Associate Professor of Cardiovascular Medicine at the University of Oxford, noted that researchers calculated that somewhere from 5-50 percent of people infected with COVID-19 suffer from Long COVID.

In a study involving 76,422 participants, a research team led by Aranka V. Ballering, MSc, found that “post-COVID-19 condition might occur in about one out of eight (12.5 %) people with COVID-19 in the general population.”

A recent Brookings Institute report published in August estimated that in the US alone between 2 million to 4 million working-age adults have left the labor force due to Long COVID. The National Center for Health Statistics calculated that around 16 million working-age Americans (18 to 65) have Long COVID, or about 8 percent of this section of the population.

A study published last July by the Reserve Bank of Minneapolis, “Long COVID: Haulers and Labour Market Outcomes,” estimated that out of the people they surveyed with Long COVID, almost 26 percent had either reduced working hours (at least 10 hours a week on a 40-hour week basis) or quit altogether.

The British Trades Union Congress (TUC) reported that 20 percent of people with Long COVID were no longer working, while another 16 percent said they were working fewer hours. Research published in *The Lancet* in July 2021 on an international cohort found that 22 percent of Long COVID patients could no longer work due to poor health, and another 45 percent had to reduce their hours.

The impacts of Long COVID on the nervous system

One of the most common Long COVID symptoms is “brain fog,” which some Long COVID advocates have described as a euphemism for brain damage. Brain fog is experienced by 20-30 percent of patients three months after initial infection, and by 65-80 percent of people with more long-term symptoms. Even people who have no symptoms or mild symptoms during their initial infection can develop this form of cognitive impairment, which makes it difficult to think or concentrate.

The adverse effects of brain fog are profound. An article published last September in *The Atlantic*, “One of Long COVID’s Worst Symptoms Is Also Its Most Misunderstood,” quoted the experience of Long COVID patient Hannah Davis, a co-author of the paper led by Eric Topol. She related, “Moments that affected me don’t feel like they’re part of me anymore ... It feels like I am a void and I’m living in a void.”

Joanna Hellmuth, a neurologist at the Public University in San Francisco, told *The Atlantic*:

At its core [brain fog] is almost always a disorder of “executive function”—the set of mental abilities that includes focusing attention, holding information in mind, and blocking out distractions. These skills are so foundational that when they crumble, much of a person’s cognitive edifice collapses.

A research paper published in *Nature* in March 2022 by Gwenaëlle Douaud, Associate Professor at the Nuffield Department of Clinical Neuroscience, compared magnetic resonance imaging (MRI) brain scans of people before and after contracting COVID. They found that even with mild infections the brain had shrunk due to a reduction in the volume of grey matter. This is a part of the brain rich in neurons that enable the control of movement, memory and emotions.

Douaud noted importantly:

[T]here is an overall stronger decrease in grey matter thickness across the entire cortex in the infected participants, but ... this effect is particularly dominant in the olfactory system (associated with the sense of smell). A marked atrophy of fronto-parietal (involved in sustained attention, complex problem-solving and working memory) and temporal regions (associated with processing auditory information and with the encoding of memory) can also be seen when contrasting hospitalised and non-hospitalised cases, suggesting that there is increased damage in the less mild cases.

The mechanism for SARS-CoV-2 impacting the brain is not clear. Although the virus is known to infect the central nervous system, this is not considered to be efficient, persistent, or frequent.

Scientists have postulated that the virus does not directly infect the brain but that inflammatory cells can travel from the lungs to the brain, thereby disrupting cells called microglia. These cells are macrophages (a type of white blood cell) that are found in the central nervous system (CNS). They remove damaged neurons and fight infections.

A study published last July in the journal *Cell*, led by researcher Anthony Fernández-Castañeda of the Department of Neurology and Neurological Sciences at Stanford University, found that brain fog experienced by Long COVID sufferers is similar to chemo fog, a syndrome of cancer chemotherapy-related cognitive impairment.

Fernández-Castañeda noted:

Examining the mouse hippocampus (brain structure involved in memory and learning) following mild respiratory COVID, we found robustly increased microglial/macrophage reactivity in hippocampal white matter (hippocampus associated with learning and memory) at seven days post-infection that persists until at least seven weeks post-infection. Consistent with previous observations that reactive microglia/macrophages can inhibit hippocampal neurogenesis, a stark decrease in new neuron generation was evident ... at seven days post-infection and persisted until at least seven weeks post-infection.

One of the co-authors, neuro-oncologist Michelle Monje, drew the parallels between brain fog and Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) and multiple sclerosis. She told *The Atlantic* that neuro-inflammation is “probably the most common way” that COVID-19 results in brain fog.

The impacts of Long COVID on the cardiovascular system

At a significant webinar hosted by the World Health Network last September, titled, “The Impact of Long COVID on Health, Society, and Economies,” cardiologist Rae Duncan gave a devastating presentation focused on the long-term effects of COVID-19 on the cardiovascular system.

She related that “COVID is predominantly, and certainly in the case of Long COVID, a vascular disease. It is a disease causing inflammation and clotting abnormalities in the blood and the blood vessels, which then has a knock-on effect on all other organs.”

Duncan cited several research papers that demonstrate the cardiovascular impacts of SARS-CoV-2 infection, including a major paper published by leading Long COVID researcher Ziyad Al-Aly and his team in February 2022. The study examined a US Department of Veterans Affairs national health care database identifying a cohort of 153,760 individuals with COVID-19 who were re-examined after one year, finding that the cohort had “increased risks” of cardiovascular disease after 30 days of being infected.

The risks were evident “regardless of age, race, sex and other cardiovascular risk factors, including obesity, hypertension, diabetes, chronic kidney disease and hyperlipidemia (high cholesterol).” The heightened risks were evident in people with no history of cardiovascular conditions.

After one year, they reported that “our results show that 1-year risks and

burdens of cardiovascular diseases among those who survive the acute phase of COVID-19 are substantial and span several cardiovascular disorders.”

The study found that there was an increased risk of heart attack, heart failure, stroke, acute coronary syndrome associated with reduced blood flow to the heart, myocarditis (inflammation of the heart muscle), pulmonary emboli (blockage of a pulmonary artery) and others. The increased risks were similar in young patients with no underlying health issues.

Duncan also discussed a research paper from the *Journal of the Society for Cardiovascular Angiography & Interventions* by Odayme Quesada and her team from the Christ Hospital in Cincinnati, which examined 585 patients with STEMI (heart attack caused by a blockage of a heart artery) and COVID-19 infection. The paper found that 30 percent of women and 18 percent of men with STEMI had MINOCAS (Myocardial infarction with nonobstructive coronary arteries—a heart attack with no artery obstruction), a marked increase from pre-COVID figures.

Research published in a July 2021 study in *The Lancet* by Ioannis Katsoularis and his team from the department of Public Health and Clinical Medicine in Umeå, Sweden examined data from 86,742 people who had contracted COVID-19 in Sweden. The researchers pointed to some of the possible causes of SARS-CoV-2 infection on the cardiovascular system:

The exaggerated inflammatory response (cytokine storm) and the direct effect of the virus on endothelial cells (cells that line the blood vessels) are likely to precipitate cardiovascular events through ACE2 receptor (cell surface proteins used by the SARS-CoV-2 virus to infect the cell) downregulation, platelet activation, hypercoagulability (increased blood coagulation), and effects on endothelial cells (activation, injury, dysfunction, and apoptosis (cell death)). Long-term effects of COVID-19 on cardiovascular risk might also be a concern but need further analyses.

Further research cited by Duncan published last September in the journal *Nature Medicine* by scientists from the Institute for Experimental and Translational Imaging in Frankfurt, Germany by Valentina O. Putman and her team examined 346 people who had contracted the virus at the median time of 109 days after initial infection and were followed up about 329 days after infection. They examined non-hospitalized individuals with no previous comorbidities, enabling greater insight into the consequences post infection.

After the initial period, they found that “structural heart disease or high levels of biomarkers of cardiac injury or dysfunction were rare in symptomatic individuals.” After follow-up, they found that 57 percent of the subjects had persistent cardiac symptoms.

The study found that “exertional dyspnea (rapid breathing after mild exertion) was the most frequently experienced cardiac symptom.” They noted that this

manifested as a wide spectrum of exercise intolerance, from the inability to regain a previous level of fitness, climbing stairs or attempting inclines, to the limiting physical aspects of professional or everyday life. Shortness of breath was often linked to an exaggerated tachycardia (heart rate over 100 beats per minute) response and post-exertional fatigue. The more affected participants refrained from leaving their homes due to sudden onset of general physical weakness, dizziness or even blackouts.

The researchers employed cardiovascular magnetic resonance imaging (CMR) to examine the participants' hearts. They used complex mapping techniques known as T1 and T2 to monitor the impact of the virus. Inflammation of the heart muscle seemed to be common to all participants in the study. They found an increase in myocardial water content and swelling in the heart. Increased water content in heart tissue is an indicator of a situation that can progress to heart failure.

Duncan warned that even people who had not had an acute severe infection may still be having myocardial inflammation. She went on to warn that there is "evidence that we may have a bigger problem and that we may have a risk of longer-term cardiovascular complications mediated through endothelial dysfunction."

Duncan called for further urgent research to determine if post-COVID endothelial dysfunction is healing or not. She concluded with an alarming warning, stating, "605 million people in the world have been infected with COVID. If the endothelial dysfunction is not healing by itself, I am very concerned that we are going to have a tsunami of cardiovascular complications including heart attack and strokes and vascular dementia over the next few decades."

Importantly, Duncan ended her presentation with a searing denunciation of the removal of all COVID-19 mitigation measures by governments around the world.

This study, the most comprehensive to date on the health impacts of repeated infections with COVID-19, makes clear that each recurring wave of mass infection with new variants of SARS-CoV-2 will cause the ranks of those suffering from Long COVID to swell. For the foreseeable future, health systems will remain overburdened with steadily increasing numbers of patients suffering from heart attacks, strokes, kidney disease, neurological disorders and more, associated with prior COVID-19 infections.

Commenting on the long-term impacts that COVID-19 will continue to have on global society, Al-Aly told the *Financial Times*, "This is not something that will go away in a week, in a year, or two, or three. This will reverberate with us for generations."

To be continued



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Reinfections and the "forever COVID" strategy

Particular mention must be made of the critical scientific work of Washington University School of Medicine researcher Ziyad Al-Aly and his team. Their collective body of research underscores the ongoing dangers facing humanity due to the ruling elites' criminal pandemic policies. By allowing COVID-19 to spread unchecked, the virus continues to evolve into new variants that cause recurring waves of mass infections and reinfections, what the WSWS has correctly termed the "forever COVID" strategy.

Last November, a major study by Al-Aly was published, focusing on the dangers of COVID-19 reinfections, which have become increasingly common since the emergence of the Omicron variant in November 2021.

The latest Al-Aly study involved 5,693,208 subjects, including 257,427 people with first infection, 38,926 people with reinfection, and 5,396,855 non-infected controls. The researchers found that the "risk and burden of all-cause mortality and the prespecified health outcomes increased in a graded fashion according to the number of infections (that is, risks were lowest in people with 1 infection, increased in people with two infections, and were highest in people with 3 or more infections)."

The study notes that these dangers affect both the unvaccinated and vaccinated, stating:

we show that compared to people with first infection, reinfection contributes additional risks of all-cause mortality, hospitalization, and adverse health outcomes in the pulmonary and several extrapulmonary organ systems (cardiovascular disorders, coagulation and hematologic disorders, diabetes, fatigue, gastrointestinal disorders, kidney disorders, mental health disorders, musculoskeletal disorders, and neurologic disorders); the risks were evident in those who were unvaccinated, had 1 shot, or 2 or more shots prior to the second infection; the risks were most pronounced in the acute phase, but persisted in the post-acute phase of reinfection, and most were still evident at 6 months after reinfection.