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COVID ISN'T DONE WITH US

The number of Canadians experiencing a variety of new, returning or continuing symptoms from the virus is higher than you might think, **Elaine Chin** writes

OPINION

Elaine Chin is the founder of Executive Health Centre. This piece is excerpted from her book *We Are Not Okay: The Pandemic and its Consequences* from Sutherland Quarterly. Now available in bookstores or subscribe at sutherlandquartlerly.com.

Somewhere around the three-year mark of the pandemic, I began to hear a lot of people say they were done with COVID – meaning they were tired of the lockdowns, tired of the precautions, tired of living in fear and eager to resume their prepandemic lives. Unfortunately, COVID-19 is not done with us.

Fifty-seven people died of the infection last week and the peak number of people hospitalized with COVID this spring was higher than during the first prevaccine wave in spring 2020. More alarmingly, studies are showing that long COVID, or post-COVID-19 syndrome, is far more prevalent, multifarious and disabling than most in the medical community expected. Millions of Canadians who caught the virus are walking wounded today. They're sick, they're down, they don't know why. Nothing shows up in the usual tests. It's probably some form of long COVID.

Post-COVID-19 syndrome, according to the Mayo Clinic, involves a variety of new, returning or continuing symptoms that people experience more than four weeks after getting COVID-19. For some individuals, the syndrome can last months or years, and it can also cause disability, the organization warns.

Among the symptoms: fatigue, neurological issues, including difficulty thinking or concentrating, headache, sleep problems and dizziness; respiratory problems, including difficulty breathing or shortness of breath and coughing; joint or muscle pain; heart issues; digestive problems; skin rashes; and mental-health issues, including depressed mood and anxiety. Symptoms can occur as soon as one month or longer after having COVID-19.

The incidence of long COVID is higher than you might think. Global data from the end of 2022 suggest almost half of COVID-19 survivors report persistent symptoms four months after their diagnosis. The prevalence of long COVID is around 43 per cent and the range can vary from 9 per cent to 81 per cent due to differences in sex, region and study population. As one would expect, those who were hospitalized with the virus were far more likely to experience long COVID (54 per cent compared with only 34 per cent of outpatients). Also, the unvaccinated appear to have it the worst. A 2021 survey showed that more than 90 per cent of the 3,700 participants who had COVID-19 without the benefit of vaccines reported a recovery time exceeding 35 weeks. By month six, most still reported fatigue, malaise and cognitive dysfunction.

A Statistics Canada survey, released in October, 2022, found that 15 per cent of people who had contracted COVID – 1.4 million Canadian adults – were still suffering from symptoms consistent with long COVID after the acute phase of infection. Since then, millions of Canadians likely contracted COVID, but it's not clear how many of them, or how many previous long-COVID sufferers, still have lingering symptoms.

It can be difficult to tell whether long COVID symptoms are specifically due to COVID-19 or are an exacerbation of pre-existing medical conditions. The virus does tend to exacerbate things. It became apparent early in the pandemic that people with pre-existing physical conditions such as heart disease, diabetes, cancer and asthma were at higher risk of serious complications and death if they contracted COVID-19. It also appears that the virus can trigger entirely new problems.

Any infection such as COVID-19 can cause the body to mount a response to fight it off. The body releases a chain of reactions that can range from creating heat – what we call a fever – to producing mucus in our nose and lungs to flush out the virus, which is why we get runny noses and cough phlegm when we're sick. Various types of white blood cells attack tissues infected with the virus. This causes local areas to become red and swollen – we call that inflammation.

Unfortunately, sometimes the body can mount an overactive response that causes inflammation throughout the body, leading to aches and pains. Sometimes, in more serious cases, other organs are involved. All of this happens while the body begins to manufacture antibodies over several days to lock down and remove the virus.

Most of the time, the organ tissue recovers by renewing itself, but if the inflammatory response is especially intense, there can be unintended consequences. Lungs can drown in fluid from the mucus being produced. The heart can beat irregularly due to damaged electrical circuits in the heart tissues. Hence, the heart cannot produce enough blood pressure to oxygenate tissues. Meanwhile, the liver and kidneys cannot filter the massive amount of toxins. In extreme cases, acute multiorgan failure can result.

People who suffered severe cases of COVID-19 and recovered from the acute phase may nevertheless experience new multiorgan effects or autoimmune conditions with symptoms lasting weeks, months or even years after their original illness. These are the result of that superinflammatory response. It can result in permanent tissue damage and scarring of the body's organs.

A study of Manitoba patients who landed in intensive care units with COVID-19 and technically beat the infection found that many developed these other problems. After 13 days in hospital, less than 8 per cent of patients were still testing positive, and by Day 25, all patients' viral loads had become undetectable. Yet some patients remained in ICU due to organ failure caused by acute inflammation in the early days of their infection.

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It should be obvious, given that COVID-19 is a respiratory infection, that some amount of lung damage would be evident in patients postinfection. A United Kingdom study from October, 2022, concluded that approximately 11 per cent of COVID-19 patients develop interstitial lung disease after hospitalization. For some, this lung damage resolves, but for others, it appears to lead to a progression of lung fibrosis.

Simply put, fibrosis is scarring. After a significant amount of damage due to COVID-19 pneumonia, the tissues of the lung stiffen, making breathing more difficult because the lungs are no longer able to expand and collapse easily to exchange gases. Such an outcome worsens the patient's quality of life and decreases life expectancy. With weaker lungs, it is far easier to develop pneumonia with any respiratory infection. Scientists have also noted that our immune system weakens after infection and even more so after reinfection, leading to other non-COVID causes of death such as bacterial or other viral infections.

Cardiologists have now recognized that the risk of cardiovascular problems such as a heart attack or stroke can remain heightened for many months even after a full recovery from a COVID-19 infection. As one might expect, patients who were admitted to intensive care with acute infections had a 20-fold higher risk of cardiovascular problems such as congestive heart failure and deep vein thrombosis (or blood clots) when compared with the uninfected. Even those who had not been hospitalized had increased risks of a variety of heart conditions, ranging from an 8-per-cent increase in the rate of heart attacks to a 247-per-cent increase in the rate of heart inflammation.

Blood vessels can also become inflamed, which increases the risk of atherosclerosis – the narrowing and hardening of the arteries. When they get to a critical narrow width, blood cannot easily flow through the arteries, and heart attacks and strokes can occur. Clotting can also happen. When this occurs in the veins, we call it a deep vein thrombosis. The most dangerous complications of DVTs are when a part of the clot breaks off and travels through the bloodstream to the lungs, causing a blockage known as a pulmonary embolism. Even a small pulmonary embolism can damage the lungs, and a large one can be fatal.

The kidneys are not spared in the acute and postacute phases of COVID-19 infection. Patients displayed a lower glomerular filtration rate, meaning kidney function had become suboptimal. Technically, how sick you were with COVID-19 determined the severity of acute kidney injury. Unfortunately, the kidney does not regenerate its tissues, unlike the liver and some other organs. It houses many delicate filters that act as a recycling system. Once these fine filters get damaged from inflammation and scarring, the kidney no longer functions efficiently. Treatment may then include dialysis and, hopefully, a successful kidney transplant. Unfortunately, some long COVID-19 patients do succumb to kidney failure.

In a massive study of more than 200,000 patients, researchers at the Veterans Affairs St. Louis Healthcare System in Missouri found that those who had been infected with even a mild COVID-19 infection had a greater risk of developing diabetes. People who caught the virus were 40 per cent more likely than veterans in the control group to develop diabetes up to a year after infection. Those with a high body mass index (BMI) doubled their chances of developing diabetes in the year after.

Two of the most common forms of diabetes are Type 1, largely a genetic condition that manifests early in a person's life, and Type 2, which is related to a person's lifestyle. You are more likely to develop Type 2 diabetes if you are overweight and physically inactive, hence the increased risk to people with a high BMI. We know that Type 2 diabetes is largely due to an insufficiency in the pancreas: In simple terms, this organ does not make enough insulin to reduce blood sugar levels. It is not difficult to see how a pancreas weakened by COVID-19 infection and damaged by inflammation can set a person up for the onset of diabetes months or years later. While diabetes does not directly kill the patient, we know diabetes causes inflammation of the arteries and later, atherosclerosis. Diabetes kills indirectly by increasing one's risk of heart attack, stroke and kidney failure.

Many who have been infected by COVID-19 complain of brain fog, memory loss, trouble with smell and taste, and a change in sleeping patterns. Researchers are just beginning to learn about COVID's impact on parts of the brain. Forty per cent of recovered patients in one study showed material changes in their brains, specifically in the white matter and brainstem. Changes in our white matter can lead to brain fog, fatigue, insomnia, anxiety, depression, headaches and cognitive problems. Brainstem changes can affect our circadian-rhythm control, which may account for the sleep problems.

Using MRI imaging, the UK Biobank study has discovered brain changes in patients who have contracted COVID compared with non-vaccinated/non-infected controls. They include brain atrophy (tissue shrinking), loss of grey matter (which controls movement, memory and emotions), and overall cognitive decline. This new study confirms the effect of inflammation on the brains of COVID patients, even when their infections were mild.

In one study, researchers in Munich examined the brains of patients who passed away from non-COVID causes but were documented to have had COVID when they were alive. They discovered that 12 of 20 of these individuals had marked accumulation of the SARS-CoV-2 spike protein in the skull-meninges and brain tissue, which was not found in control subjects. It's notable that only the spike protein and not other parts of the virus were found in their brain tissues.

Animal models show these spike proteins cause brain cell injury and persistent inflammation. This finding gives us a better understanding of why so many people, even after a mild bout of COVID, continue to experience neurological symptoms even after the apparent recovery of their COVID infection.

This implication of brain damage on a subset of the population is significant for the workplace and future ability to function with activities of daily living. This is yet another knock-on effect of COVID and one that many health care practitioners may be dismissing because the symptoms have no apparent cause.

It is understandable that after an intense three-year ordeal, people want to put COVID-19 behind them, but it is nevertheless a mistake. I've only touched on the lingering medical consequences of the pandemic; there is strong evidence that the mental-health consequences are just as dire. Combine these with the damage done to our health care system, our education system, our economy, our workplaces, and our public sphere, and it becomes abundantly clear that we need a full-scale government inquiry into how we've handled COVID-19 and what we might do better in the future. As the World Health Organization said last month, the next pandemic is only a matter of time. There's very little evidence that we'll be any better equipped for it.