

# Long COVID: Different treatments for different symptoms

- Prof. Suranjith Seneviratne

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He completed his MD in Internal Medicine and trained in Clinical Immunology/Allergy at the John Radcliffe Hospital, Oxford.

He completed a DPhil in Molecular Medicine at the Weatherall Institute of Molecular Medicine, Oxford University. So far, he has authored 262 journal publications (h-index of 42). He has published in journals such as Nature, Science, Nature Medicine and Journal of Experimental Medicine. He is an international expert in Immunodeficiency, Autoimmune, Allergic/Mast Cell disorders and Immunogenetics.

### DINULI FRANCISCO

A year and a half into the pandemic, the long-term effects of SARS-CoV-2 infection are garnering more research attention as millions of "long COVID" patients emerge. As much as the topic of acute COVID-19 has come into play, the post-COVID syndrome or long COVID too has been actively focused on in recent times.

In order to gain a deeper insight into the matter of long COVID, the *Daily News* reached out to Prof. Suranjith Seneviratne, Professor and Consultant in Clinical Immunology and Allergy at the Royal Free Hospital and University College London and Health Services Laboratories, London.

#### Q. What is the post-COVID syndrome or Long COVID?

A. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is the pathogen responsible for the coronavirus disease 2019 (COVID-19) pandemic, which has resulted in a global healthcare crisis and a strain on limited health resources. Acute COVID-19 can be either symptomatic or asymptomatic. Some have mild symptoms and hospitalisation is not required, whilst others may develop moderate or severe symptoms.

We have also found a group of patients who continue to have symptoms for more than 12 weeks (after being infected) which could not be explained by another cause. The symptoms included severe fatigue, headaches, shortness of breath, body aches and pains, brain fog and joint/muscle pain.

Thus some of those who develop mild or severe COVID-19, may go onto have symptoms that last more than 12 weeks after the acute infection. This is called post-COVID-19 syndrome or "long COVID".

#### Q. What are the symptoms of Long-COVID?

A. We can divide the symptoms into different categories, such as general, neurological, cardiac, joint/bone, abdominal and respiratory. General symptoms can be listed as fatigue, tiredness, body aches and issues with concentration or memory.

Respiratory symptoms may be associated with difficulty in climbing stairs because of tiredness or breathlessness or the inability to walk as they had done before (that is prior to the SARS-CoV-2 infection). Although they have recovered from acute COVID, some continue to find it difficult to breathe, and have varying levels of shortness of breath.

Cardiovascular symptoms can be listed as palpitations, blood pressure changes, non-specific chest pain and some features of heart muscle inflammation (myocarditis).

The neurological symptoms could be headaches, vision disturbances, anxiety, insomnia, depression and brain fog. Abdominal and kidney symptoms can also occur. High levels of fatigue appear to be the predominant long COVID symptom found in many patients. This is a systematic way of categorising long COVID symptoms.

The treatment or management depend on what symptoms the person has; not everybody has the full list of symptoms. People complain that they cannot look after their children; they cannot work for long hours, and those who were good with numbers and figures find this to be no longer easy. Some even find it challenging to work during the evenings and only find it easy to work in the mornings. These are some of the frequent complaints or statements that are mentioned by patients experiencing long COVID.

#### Q. What is the connection between COVID and memory lapses (brain fog)?

A. When a person is infected with SARS-CoV-2, a

number of immune and other chemicals (such as cytokine and chemokines) are produced, and in some, the amount and rate of production of these chemicals are very high. So, in addition to affecting the heart, lungs, kidneys and liver, these chemicals can also affect the nervous system (nerves and brain). As a long term effect, they can produce issues such as concentration and memory impairment. We still do not know the exact way in which this happens, but we know that some of the chemicals produced by the body for fighting the viral infection, may lead to long-term ill effects if produced in an unregulated manner.

When a person has a viral infection, the immune system fights this off by producing specific antibodies and white blood cells and many chemicals/molecules by which the immune cells communicate with each other. If produced in excess or in a prolonged fashion, they may act on muscles, joints, brain, heart and the gastrointestinal system; and as a result, a set of diverse symptoms may be observed. We need to ensure that while the body is responding to a viral infection, the person's immune system is looked after carefully and appropriately.

As of now, we know that 'brain fog' is a very troublesome symptom seen by a number of those with long COVID and its recognition and treatment is important for optimal care for such persons.

#### Q. How long can Long COVID last?

A. The initial hints to the possibility of an entity called long COVID came over a year ago (around July or August 2020). Initially some thought these manifestations were related to anxiety following the viral infection. But with the passage of time, and as many more persons (including some well-known medical doctors) started experiencing similar symptoms, people started looking at this aspect more systematically and by October 2020, the first steps for recognising these symptoms as the post COVID syndrome or long COVID came into action.

Thus, how long the symptoms may last can vary. For some people, it is four months and for others, it may be six to nine months or even longer. As research into long COVID is still at an early stage, we are yet to work out the most common time period these symptoms may last for in the majority of cases.

#### Q. Can Long COVID be fully cured, or will it have traces?

A. With proper and targeted care, the patient's symptoms can be reduced, and this increases the possibility of that person getting back to normal activities quite quickly. However, there is a group (possibly about 10-20 percent of those that develop long COVID) in whom the symptoms may persist for much longer. COVID-19 can manifest a broad spectrum of severity from asymptomatic to severe and fatal forms. Likewise, long COVID too has its own spectrum of symptoms and the length for which they may last.

#### Q. Out of cured COVID patients, what percentage generally gets Long COVID?

A. We still do not have a good definition for long COVID. It is a diagnosis of exclusion and a number of clinical findings are put together to say that a person has long COVID. In contrast, for diagnosing COVID-19, we are able to do a PCR test and then calculate how many infections there are.

On the other hand, long COVID is a clinical diagnosis, and currently we do not have a single blood, urine or tissue test to prove that a person has long COVID.

One to two percent of people in their twenties who had a SARS-CoV-2 infection would develop long COVID. The rate is higher (around five percent) in those who are in their sixties. Sri Lanka can learn a lot from the West regarding the spectrum of symptoms that are seen in long COVID and how these have been managed. In the UK, long COVID patients were identified and managed from the second half of last year, and any important lessons learnt could be applied to the patients identified in increasing numbers in Sri Lanka.

As of now, between one to five percent of those that develop SARS-CoV-2 infection may go onto develop long COVID.

#### Q. Is there a vulnerable age group for Long COVID?

A. Those with comorbidities and who are older are at higher risk of long COVID. It appears to be twice as common among women.

Many in their 20's, 30's and 40's are currently getting referred to specialist long COVID clinics and this may be because of the life-changing nature of the symptoms they have and the adverse effects this is hav-



CARE PEOPLE HEALTH  
Respiratory COVID  
Return to work Shift patterns  
FATIGUE Well-being

## Long - COVID

LONG COVID Recovery  
Return to work  
FATIGUE  
SUPPORT  
RECOVERY  
Respiratory WELL-BEING  
Fatigue Shift patterns Advice  
Return to work  
Fatigue Respiratory  
SUPPORT Advice Mental health

ing on their quality of life and their work and leisure activities.

In a broader perspective, people who die from COVID-19 are frequently older men, and those who get the rare adverse effect of myocarditis after the mRNA vaccines are given are predominantly young males and the most vulnerable group for long COVID appear to be women.

#### Q. How does vaccination help to tackle Long COVID?

A. Preventing SARS-CoV-2 infection is an important step for avoiding post-COVID syndromes. Getting the COVID-19 vaccines and following appropriate and recommended public health and social measures would help reduce the risk of SARS-CoV-2 infection. One of the reasons put forward for vaccinating children with the COVID vaccine, is to reduce their risk of getting long COVID.

#### Q. How many Sri Lankans do you think have been affected by Long COVID?

A. According to preliminary data, long COVID appears to be less in South Asia than in the West. However, further studies should be done on this topic to better delineate this observation. Preliminary research data have found those that developed severe COVID have a higher rate of complications in the three months following hospital discharge. This has been especially so for those with comorbidities such as obesity, hypertension, and diabetes. Such individuals need to be monitored carefully after discharge, and the observed symptoms must be treated and managed promptly.

#### Q. Are there any effective medications/treatments for Long COVID?

A. This would depend on the clinical features the patient develops. Long COVID does not present in the same way in all patients and it is important to recognise the symptom categories that predominate in each person. Fatigue, concentration/memory involvement and body aches and pains can be managed using multidisciplinary inputs from the physiotherapy and occupational therapy

teams, general physicians and psychologists. Respiratory and cardiac symptoms need to be evaluated by the respective clinical teams such as general physicians, respiratory medicine and cardiac teams. Based on their findings, the patient would be treated accordingly. For example, if respiratory symptoms are prominent and troublesome, such patients may need a short course of steroids for symptom control. With cardiac symptoms, if blood pressure is low and the heart rate is high, appropriate treatment may be considered by the cardiac team.

When you get infected, the immune system gets activated and then needs to come back to the baseline level; the time it takes to do so, can vary in different people. At all times and especially following an infection, we have to look after our immune system to allow it to function optimally. Some of the steps that would help in this process include, consuming a healthy and balanced diet and having as regular meal times as possible, not taking on excess work that is beyond that person's capacity to cope with, ensuring that at least seven hours of sleep is obtained each day, not smoking tobacco, avoiding high levels of alcohol or binge drinking and taking adequate amounts of fluid. Once some symptoms are present, undertaking graded exercises and not attempting to start with very strenuous workouts, appropriate and supervised physiotherapy, postural exercises and taking adequate periods of rest should allow one's immune system to return to normal functioning in the shortest time possible.

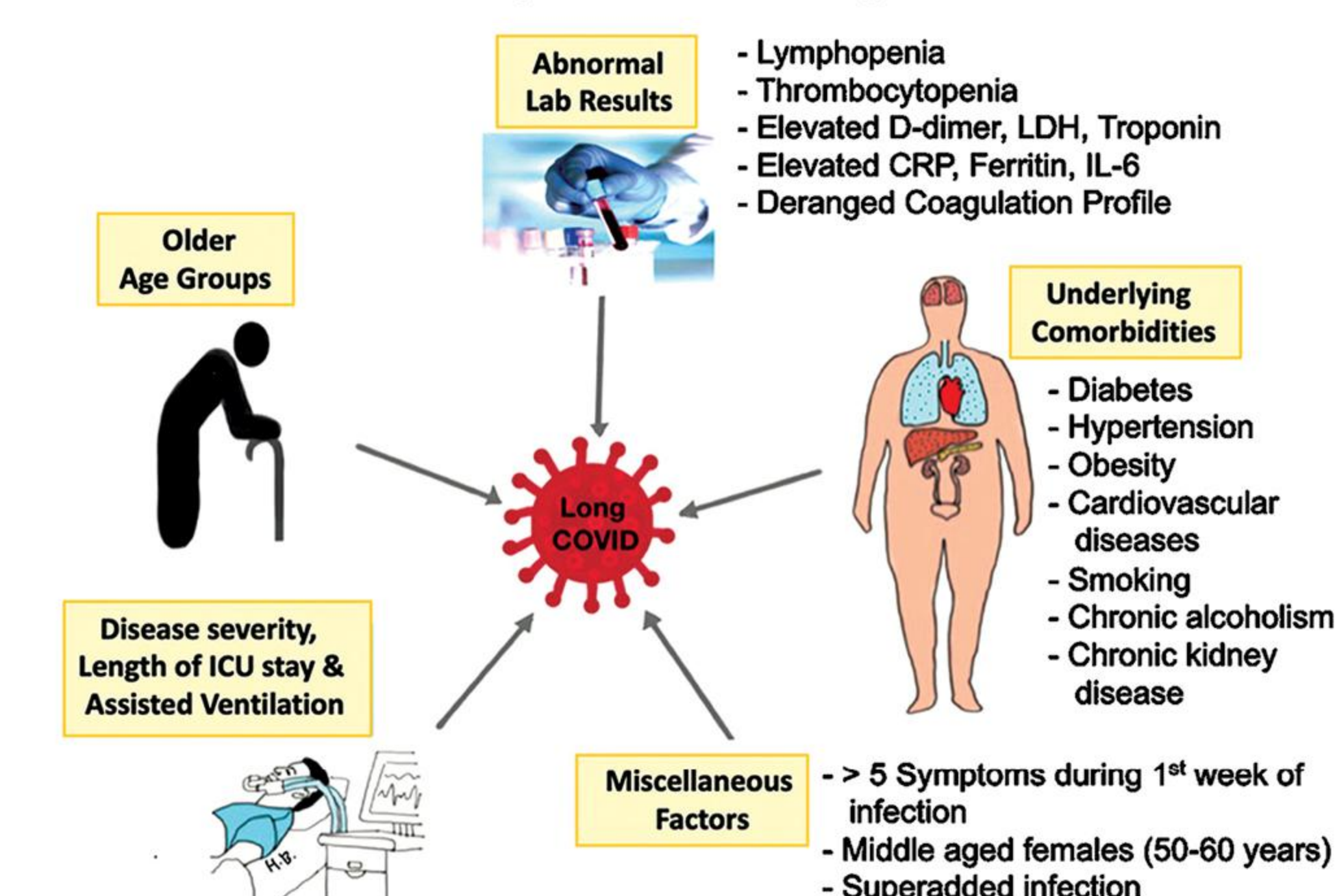
#### Q. Can Long COVID get fatal or very dangerous?

A. Generally no, but if the person has cardiac or respiratory problems, it can lead to more severe outcomes. With acute COVID, people have a risk of dying, but with long COVID, it is predominantly troublesome long-term symptoms leading to morbidity that we are dealing with rather than mortality.

The quality of life of the person is affected, and it can be a struggle for them to get back to their normal lives or working patterns.

As time progresses, we would gather sufficient information from different countries to make more data-driven conclusions about patterns of morbidity, the frequency of the more severe outcomes and the time intervals needed for recovery.

### Predictors / Risk Factors for Long-COVID



## LONG COVID

POST COVID SYNDROME

GENERALISED • Fatigue • Pain • Fever

### DEFINITIONS

#### Acute Covid-19

Signs and symptoms of Covid-19 for up to 4 weeks that remain.

#### Ongoing symptomatic Covid-19

Signs and symptoms of Covid-19 from 4 weeks up to 12 weeks.

#### Post-Covid syndrome (Long Covid)

Signs and symptoms that develop during or after Covid-19 infection, up to 12 weeks or more and are not explained by an alternative diagnosis.

Source: United Kingdom National Institute for Health and Care Excellence (NICE)

### Psychological/psychiatric

• Depression symptoms  
• Anxiety symptoms

### Ear/nose/throat

• Tinnitus (ringing sound in the ear)  
• Earache  
• Sore throat  
• Loss of taste and/or smell

### Gastrointestinal

• Abdominal pain  
• Nausea  
• Diarrhea  
• Anorexia and reduced appetite

### Musculoskeletal

• Joint pain  
• Muscle pain

Source: Health Ministry (KKM)

### Neurological

• Cognitive impairment (Brain fog, loss of concentration or memory loss)  
• Headache  
• Sleep disturbance  
• Peripheral neuropathy symptoms  
• Dizziness  
• Delirium

### Respiratory

• Breathlessness  
• Cough

### Cardiovascular

• Chest tightness  
• Chest pain  
• Palpitation

### Dermatological

• Skin rashes

