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# Review Article Update Long COVID-19

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# ABSTRACT

I present our experiences in Kent/Medway NHS services of patients with long COVID-19 syndrome over the past 4 years, including better ways to manage its impact. Ideas around the pathophysiology and the dominant role of mental health in this condition is also discussed. The majority of our nearly two thousand patients recovered over 18 months to 2 years. Rehabilitation programs have been shown to be effective, as have self-management strategies.

Keywords: Long COVID-19, Post COVID-19

# INTRODUCTION

Four years after the start of the COVID-19 epidemic, our understanding of this modern epidemic and its long term implications continues to grow. Although many people affected by COVID-19 virus will get better in the first 4-8 weeks of illness, some will still be struggling beyond this early phase. If still symptomatic beyond the first 12 weeks they are said to have developed long Covid or post-Covid syndrome.<sup>1</sup>

# **RECOVERING FROM COVID-19: WHAT WE KNOW TODAY**

We know that as many as 1 in 20 patients will experience troubling post-viral symptoms and will find the recovery both prolonged and difficult. The largest group of such patients came from the first wave of early 2020 when people lacked immunity to the COVID-19 virus. Later, virus waves like delta and omicron have shown a sharp decline in long-term COVID-19 complications, possibly due to our improved herd immunity from a combination of natural viral infection and the impact of the COVID-19 vaccine program. Indeed, the best way to prevent long-COVID-19 is to have had at least two doses of the COVID-19 vaccine, with a 50% risk reduction being shown in the original studies from Sweden and the UK Zoe's symptom tracker program.<sup>2.3</sup>

Those affected by the long COVID-19 have experienced an unpredictable roller-coaster course with dozens of symptoms, both physical and mental, being linked to it. Remissions and relapses are common, with flare-ups linked to over-exertion and unrelated minor illnesses. This is why careful pacing is needed in exercise programs designed to rebuild strength and stamina in a stepwise manner. The good news is that even the worst affected patients we have seen in Kent and Medway can usually recover, although this can take up to 18 months–2 years.

The combination of post-COVID-19 symptoms may appear weeks or occasionally months after the start of the illness and has been linked to imbalances in the psyche, nervous system, immunity, blood clotting, and hormonal systems. These include low energy, easy fatigability,

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breathlessness, aches and pains in muscles/joints, pains in the chest and lungs, palpitations, alteration and loss of smell, and stomach and bowel symptoms. Sexual dysfunction and menstrual disturbances may also occur. Mental health problems, including anxiety and depression, are common and can also trigger psycho-somatic symptoms such as chest pain and breathlessness, headaches, sleep disturbances, brain fog, sluggish memory, dizziness, and peripheral nerve symptoms. Long COVID-19 is much rarer in children, showing a definite increasing trend in older populations, and much more common in women than in men. Young adults and occasionally children can also get affected and seem more prone to postural tachycardia syndrome (PoTS).<sup>4</sup>

# SOME IDEAS WE HAVE PICKED UP FROM UK AND INTERNATIONAL STUDIES

- Post-exertion symptom relapses of physical or mental workload beyond the patient's "energy envelope" may cause a relapse of symptoms, including fatigue, fever, myalgia, and breathlessness. Relapses may manifest immediately or after a delay of 24–48 hours and may last days or weeks. Patients may find that pacing their exercise according to the calculated target heart rate of 55% (220 minus age) is helpful. For someone aged 60 years, that is 55% of (220–60) = 88/min
- Autonomic nerve dysfunction manifesting as PoTS occurs commonly and can lead to faints, dizzy spells, tremors/shakiness, and palpitations. Medications such as beta-blockers and ivabradine may help along with lifestyle modification and maximize hydration and blood volume.<sup>4</sup>
- Functional neurological disorders can explain many of the most common psycho-somatic symptoms. This is best explained to patients as a "software" problem of the body's brain and nerves as the structure or "hardware" is intact, explaining the normal findings of scans and routine blood tests.<sup>5</sup>
- Long COVID-19 rehabilitation programs have found dysfunctional breathing to be the main cause of breathlessness. As majority of patients have normal lung function studies showed normal chest X-rays and computed tomography scans. The Nijmegen questionnaire remains useful as a screening tool to diagnosis this group.
- Histamine imbalance or mast cell activation is believed to be responsible for patients who exhibit sensitivity to histamine-rich foods and prominent GI symptoms, such as bloating, cramping pain, diarrhea, and acid reflux. The role of low histamine diets and high-dose histamine H1/H2 blockers seems to help.<sup>6</sup>

# POST COVID-19 MANAGEMENT HELP AVAILABLE

Up-to-date information about COVID-19 can be found on the following reliable websites:

- National Health Service (NHS) Your-Covid-Recovery https://www.yourcovidrecovery.nhs.uk
- Asthma UK and British Lung Foundation Post-Covid hub: https://www.post-covid.org.uk with links for patients, health care professionals, and research teams.

Both websites have the latest patient guides on symptoms and steps to promote a steady recovery. Your-Covid-Recovery is also linked to the rehabilitation program for patients who are under the NHS recovery program. They will also be given an app to monitor progress through a web interactive program.

# Social media support groups

We now have groups created and supported by the British Lung Foundation and Macmillan UK, which contain many useful ideas from fellow patients and professionals. https:// www.selfhelp.org.uk/COVID-19\_Survivors\_Group\_UK

#### Helping UK research teams

COVID-19, caused by the severe acute respiratory syndrome-2 virus, has created an entirely new illness that healthcare teams worldwide are gaining more experience with treating every day. Many trials are ongoing and following up on long COVID-19 patients; this includes increasing awareness of long COVID-19 in children.<sup>7</sup> See the National Institute for Health and Care Research [NIHCR] website for more details.<sup>8</sup>

### REFERRAL TO SPECIALIST POST COVID-19 CLINICS

Patients who are not recovering with self-management guidance or have more severe problems need a general practice (GP) clinic assessment and should be entered in patient GP records as having post-COVID-19 syndrome and then referred to the post-COVID-19 Assessment Service for a detailed assessment by experienced clinicians. This service covers all areas of Kent/Medway and can be used 12 weeks after the acute illness first struck. Outcomes can include:

- 1. Registering with Your-Covid-Recovery program and, if needed, Occupational Therapy help
- 2. Consultant clinic specialist review, e.g., by chest, cardiology, or rheumatology
- 3. Mental health problems assessment and referral to counseling or other well-being measures.

#### Well-being and mental health support

NHS counseling teams are accepting long COVID-19 mental health self-referrals either online or by phone. See

what is available in your area at https://livewellkent.org. uk. The MIND website<sup>9</sup> has good resources for the mental health well-being of adults and children [Young-Minds] support, as does the Live-it-well Kent council website and British Broadcasting Company (BBC) mental health series TV programs. Many patients have found mindfulness and meditation to be of great benefit.<sup>10</sup> For the hardworking NHS frontline teams in Kent/Medway, there is a large online collection of support from the well-being hub.<sup>11</sup>

#### Encouraging singing and art for health recovery

Music and singing have proven benefits for mental health/ dementia sufferers/Parkinson's disease and chronic obstructive pulmonary disease. Much work has been done by Kent-based organizations such as the CANTATA Trust Canterbury and Music4Wellbeing. They are running an internet/web singing group for lung health/post-Covid recovery program, which is enrolling patients under the banner "sing to beat Covid." www.singtobeat.co.uk/covid-19. A similar approach has been organized through the British performing arts group BAPAM with both education programs and online videos and by the English National Opera.<sup>12</sup>

#### CONCLUSION

Having followed many patients through the difficult journey of the post-COVID-19 syndrome, we have gained much knowledge and experience around better management strategies. Long COVID-19 rehabilitation works, and strategies to support mental health recovery are fundamental to the success of such programs. Most patients will recover over time, though this may take up to 2 years for the most severely affected.

#### **Ethical approval**

Institutional Review Board approval is not required.

#### Declaration of patient consent

Patient's consent is not required as there are no patients in this study.

#### Financial support and sponsorship

#### Nil.

#### **Conflicts of interest**

There are no conflicts of interest.

# Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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