



# Inquiry into Long COVID and Repeated COVID Infections

Submission from the Australasian Sleep Association and Sleep Health Foundation

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## Overview

Treating disturbed sleep that occurs in many people with acute COVID-19 infection and long COVID can improve some of their most common and debilitating impacts including fatigue, impaired cognition and altered mental health.

Inadequate or poor-quality sleep influences every aspect of physical and mental health. Just one night of poor sleep affects cognitive functions such as memory, attention and decision-making. Long term sleep problems are linked to increased risk of hypertension, diabetes, weight gain, cardiovascular disease, depression, anxiety and suicidal behaviours.

There are well-established and well-documented links between disturbed sleep, impaired cognitions and fatigue in previously studied populations such as [shift workers](#), [cancer patients](#) and [people with multiple sclerosis](#).

It is not known exactly why both acute and long COVID affects sleep, but it is clear that patients do suffer significant sleep issues – including unrefreshing sleep – in both these circumstances.

An unanswered question is to what extent such sleep problems are:

- (1) part of the spectrum of symptoms *caused* by long COVID (e.g., by the illness itself changing the macro or micro structure of sleep or causing the development of a sleep disorder such as sleep apnoea or insomnia), or whether
- (2) sleep problems co-occur with long COVID as a *consequence* of perpetuating behavioural and/or cognitive factors (e.g., circadian rhythm disruptions associated

with chronic fatigue, or mental health problems associated with living with a poorly understood debilitating chronic illness), or if  
(3) both aspects may typically play a role.

Research addressing the above, as well as rigorous clinical trials, will result in better informed treatment options for long COVID, and possibly other post-viral disorders as well such as myalgic encephalitis/chronic fatigue syndrome (ME/CFS).

### Long COVID and sleep problems commonly co-occur

[A recent paper](#) reported on over 13,000 patients from more than 16 countries, finding that “long-lasting sleep problems are at the core” of long COVID. Fatigue (61.3%), insomnia symptoms (49.6%) and excessive daytime sleepiness (35.8%) were all very commonly reported by people with long-lasting symptoms after hospitalisation for COVID-19.

[A systematic review](#) looking at persistent COVID symptoms found that approximately 29% of patients across 8 studies reported sleep disorders or insomnia at least 60 days after diagnosis, or at least 30 days after recovery from the acute illness.

[A US study](#) reported that among 1,321 patients presenting to a long COVID clinic, over 40% reported moderate or severe sleep disturbance, and this was associated with obesity, black race and mood symptoms.

Two papers studied post-COVID symptoms among previously hospitalised patients. [One study](#) found 34.5% reporting continued sleep problems, while almost half of the 1,142 patients reported sleep problems, anxiety, or depression seven months after hospitalisation. There were significant positive associations between sleep problems with both anxiety and depression symptoms.

The [second paper](#) assessed 1,733 patients six months after hospitalisation for COVID, finding that patients reported fatigue or muscle weakness (seen in 63%) and sleep difficulties (seen in 26%) as the most common symptoms, with anxiety or depression reported among 23% of patients.

### Mental health, sleep and Long COVID

Several studies mentioned above suggest an association between sleep problems and mental health issues in patients who have experienced COVID infections. [A paper](#) reporting on symptoms of anxiety, depression and sleep quality in 2,000 patients previously hospitalised with COVID found that recovery from sleep problems was slower than for anxiety and depression. There is no confirmed causal link between sleep problems and mental health issues in patients who have experienced COVID infections, but there is strong evidence of a bi-directional link between sleep and mental health more broadly.

It is [well established](#) that sleep and mood share strong reciprocal relationships. Up to 90% of people with depression report sleeping difficulties, and 50% of people with insomnia report depression [symptoms](#). Furthermore, [treatment of clinical sleep disorders](#) reliably improves anxiety and depression [symptoms](#). For example, [one large meta-analysis](#) found that improving sleep quality leads to better mental health. [Another meta-analysis](#) evaluating the impact of CBT-I on insomnia also found the treatment had positive effects on psychiatric conditions.

Although research on sleep and mental health in patients with long COVID is still emerging, the existing evidence clearly indicates that these strong bi-directional associations between [sleep](#) and [mental health](#) persist.

### Treatment of sleep disorders in long COVID patients

There is no good quality evidence to guide treatment of sleep disorders in people with long COVID, although management of disturbed sleep has been recommended as a key pillar for improving long COVID outcomes in a [consensus recommendation](#) of the National Covid-19 Clinical Evidence Taskforce. As such, consideration should be given to providing treatment under the auspices of clinical trials to help determine optimal treatment.

There is significant overlap in symptoms of sleep disturbance and fatigue between patients with long COVID and those with ME/CFS. A framework such as that outlined for the management of ME/CFS in the [NICE guidelines](#) can give guidance on treatment options.

Further, [a review](#) of research on sleep in ME/CFS patients notes that ‘there is preliminary evidence that alterations in sleep stage transitions and sleep instability, and other physiological mechanisms, such as heart rate variability and altered cortisol profiles, may be evident.’ It is too early to say whether such physiological findings may mean that sleep problems in both disorders (ME/CFS and long COVID) are caused by the illness itself. Understanding the aetiology of non-restorative sleep in these post-viral disorders may lead to insights about non-restorative sleep and fatigue in other medical conditions.

There is a general lack of awareness among health care practitioners regarding post-viral hypersomnolence disorders and there is a serious lack of treatment options available on the PBS. Additionally, patients often struggle to obtain a diagnosis due to a lack of access to appropriate sleep testing and sleep physicians

Cognitive behaviour therapy for insomnia (CBT-I) has long-term positive effects in chronic insomnia occurring in a range of co-morbid conditions. Although CBT-I hasn't been studied in the context of long COVID, it would be expected that CBT-I would help to improve symptoms of insomnia in people with long COVID. CBT-I [is effective](#) in improving sleep with positive flow-on effects to mental and physical health. It is a preferable approach to using hypnotic or sedative medications for insomnia which should be reserved for short term use or in those with high levels of distress or co-morbid psychiatric disturbance.

In patients with long COVID and excessive sleepiness (hypersomnolence) or suspected sleep disorders such as obstructive sleep apnoea, clinical assessment by a sleep physician is important to evaluate individual symptoms, arrange appropriate investigation and formulate an individualised management plan.

Resources, information and education on improving sleep during chronic illness and long-term recovery need to be freely available to people experiencing long COVID. While there are no studies on the benefits of this specifically for long COVID, the general principle can be extrapolated from research into other conditions on the important role of having good quality, freely available information and resources for patients and their healthcare providers.

## Recommendations

As sleep disturbances are recognised as a key feature of both acute and long COVID, the Sleep Health Foundation and Australasian Sleep Association make the following recommendations.

- (1) Clinical trials and further research are needed to understand the links between COVID and sleep disorders, and to establish optimal treatment strategies.
- (2) Health service planning for future management of long COVID patients must include well-resourced sleep services to manage the serious impacts of sleep disorders on fatigue and impaired cognition.
- (3) The multidisciplinary teams needed to support patients with long COVID must include both sleep and mental health specialists.
- (4) Clinical approaches to managing long COVID need to consider the close, bi-directional links between poor sleep and poor mental health.
- (5) Evidence-based information about how to obtain adequate amounts of good quality sleep should be produced and be easily accessible to help people experiencing long COVID.
- (6) Patient information resources for these patients should be available in multiple community languages and communication formats that are accessible to all Australians.

## About us

The **Sleep Health Foundation** is Australia's leading advocate for healthy sleep. It aims to improve people's lives by promoting sleep health, raising awareness of sleep disorders and building partnerships with organisations with complementary objectives. It includes the Australian Sleep and Alertness Consortium (ASAC), the transition (legacy) structure for the Alertness Cooperative Research Centre, comprised of stakeholders involved in the development and deployment of innovative solutions to improve workplace productivity and safety.

The **Australasian Sleep Association** is the peak scientific body in Australia and New Zealand representing clinicians, scientists and researchers working in sleep health and sleep medicine. The Association is experienced in developing clinical guidelines, professional education and

other services aimed at improving the quality of sleep health. The Australasian Sleep Association has been a member of the National COVID-19 Clinical Evidence Taskforce since March 2020 and this continues currently with members providing input to the guidelines. The association is a current recipient of Commonwealth grant funding under the Health Peak and Advisory Bodies program to provide evidence-based sleep health and sleep medicine information to assist with informing Australian Government policy, as well as informing the Government about emerging issues in relation to sleep health and sleep medicine. The program also has a focus on supporting the goals of the recently-released National Preventive Health Strategy 2021-2030.

**Contact**

Dr Moira Junge  
CEO  
Sleep Health Foundation  
[ceo@sleephealthfoundation.org.au](mailto:ceo@sleephealthfoundation.org.au)  
0402 583 341

Ms Marcia Balzer  
CEO  
Australasian Sleep Association  
[ceo@sleep.org.au](mailto:ceo@sleep.org.au)  
0430 175 310