

In brief

Post-acute sequelae of COVID-19

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- The [World Health Organization](#) defines post-acute sequelae of COVID-19 (PASC) as “the condition that occurs in individuals with a history of probable or confirmed SARS CoV-2 infection, usually three months from the onset of COVID-19 with symptoms and that last for at least 2 months and cannot be explained by an alternative diagnosis. Common symptoms include fatigue, shortness of breath, cognitive dysfunction but also others and generally have an impact on everyday functioning. Symptoms may be new onset following initial recovery from an acute COVID-19 episode or persist from the initial illness. Symptoms may also fluctuate or relapse over time.”¹
- The global estimated pooled PASC prevalence ranges from 43% to 63%, with a higher pooled PASC prevalence estimate among those hospitalised during the acute phase of infection.²⁻⁴
- Risk factors for the development of PASC may include those who had symptomatic COVID-19 infection, hospitalisation, and severity of illness. Other potential risk factors include old age, female sex, a high number of comorbidities and moderate and severe obesity.⁵
- Whilst some symptoms are specific to different points in time following acute illness (table one), fatigue, dyspnoea and smell or taste impairment are consistently reported for twelve months.⁶⁻⁸
- Routine follow up and symptom assessment of PASC generally includes a comprehensive clinical history and appropriate examination that involves assessing physical, cognitive, psychological and psychiatric symptoms, as well as functional abilities.^{9, 10} Referral to an evaluation in a specialised outpatient COVID-19 recovery clinic for patients with persistent symptoms lasting beyond 12 weeks.¹¹
- Management of these conditions is not well defined and is generally based on the management of symptoms following similar illnesses. Existing guidance includes self-management and multidisciplinary approach.^{9, 12, 13} Pulmonary rehabilitation has shown improvements in exertional dyspnoea, physical capacity, quality of life (QoL), fatigue, and depression.¹⁴
- A study from the United Kingdom of 1.2 million adults found the odds of having COVID-19 symptoms 28 days or more post-infection were approximately halved by having two vaccine doses.¹⁵ A preprint from the United States found patients who received at least one vaccine dose prior to their diagnosis with COVID-19 were 7-10 times less likely to report two or more long-COVID symptoms, compared to unvaccinated patients.¹⁶

Table one: PASC symptoms

Time period	Symptoms
One month	63.2% of COVID-19 survivors had one or more symptoms 30 days after onset / hospitalisation. The most frequent symptoms are cough, loss of smell or taste, dyspnoea, fatigue, and confusion. ³
Three months	A cohort study found 55% reported not feeling fully recovered from COVID-19 at 3 months post-discharge, and 93% reported persistent or new symptoms. ⁶ The most

Time period	Symptoms
	common symptoms were fatigue, dyspnoea, muscle and joint pain, loss of smell or taste, and problems sleeping. ⁶ There have also been reports of cardiac sequelae, neurologic symptoms, psychosocial symptoms and case reports of diabetic ketoacidosis reported. ^{10, 17-19}
Six months	54% of people experience at least one PASC symptom at 6 months. ⁴ Commonly reported symptoms include fatigue, post exertional malaise and cognitive dysfunction. Persistent chest CT abnormalities, decreased lung function, respiratory symptoms, muscle weakness, sleeping difficulties, decreased quality of life, loss of taste and smell, dyspnoea, pain, discomfort, anxiety and depression are also reported. ^{7, 20-22} In children, prevalence of PASC ranged from as low as 1% to 45%. ²³⁻²⁸
Twelve months	Approximately 50% of people reported persistence of at least one symptom at 12 month follow up, most commonly fatigue, followed by smell or taste impairment. ⁸ PASC symptoms decreased from 68% to 49% between 6 and 12 months, and more patients had anxiety or depression at 12 months compared with 6 months. ²⁹

The Critical Intelligence Unit maintains a living evidence table on [PASC](#) which was used to inform this brief with supplementary searches as required.

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