Supporting occupational health and wellbeing professionals

Long COVID and Return to Work – **What Works?**

A POSITION PAPER FROM THE SOCIETY OF OCCUPATIONAL MEDICINE

August 2022

PREFACE

This paper provides a summary of a SOM Webinar entitled *"Long COVID and return to work support - what works?"* in March 2022, which was organised because of the different approaches to the management of Long COVID across the UK and elsewhere.

The purpose of this paper is to provide guidance on the identification and management of Long COVID – particularly regarding return to work. It will be of use to occupational health providers, employers, workers, people with Long COVID, HR personnel, managers, medical, allied health professionals and unions. A multi-disciplinary approach is essential to help retain and support people affected by Long COVID to return to work.

There are useful appendices on:

- *Universal first-line screening assessment in Long COVID*
- *Red flags and specialist referral*
- *Treatment which can help function and recovery*
- *Rehabilitation*
- *Specific Fitness for Work considerations after COVID-19 infection*
- *Examples of workplace adjustments for Long COVID*
- *Prevention of infection: risk management in the workplace*
- *Workplace public health messages*

There are also some excellent *case studies*.

SOM would like to see organisations take a strategic, planned approach to managing this workforce health issue, using occupational health input, rather than leave it to individual line managers alone to decide how to best manage each case.

This guidance has been produced by members of The Society of Occupational Medicine Long COVID Group and other experts stated in the Appendices – thank you for your time and expertise, in particular Dr Clare Rayner, who was instrumental in its development.

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Chief Executive, Society of Occupational Medicine

1. INTRODUCTION

Long COVID is a massive public health problem.

The Office of National Statistics reported in May 2022 that an estimated two million people, 3.1% of the UK population, currently experience Long COVID, with nearly 800,000 reporting symptoms for more than one year [1]. The prevalence is greatest in 35-69 year olds so most people affected are of working age and the potential economic impact is colossal. Despite this, the response of health care systems has been slow, variable and inadequate, reflecting the fact that most Long COVID sufferers are in the community, do not require hospital care, have varied symptoms and are suffering from what is, in effect, a new disease. Large patient groups, such as Long COVID Support, have been instrumental in recognition of the problem, in advocacy and in involvement in research to meet their needs.

The impact on workability is high and Medinger found that of 1,250 people infected in early 2020, only 8% were back working at pre-COVID level [2]. A meta-analysis carried out by Lopez-Leon et al (2021) indicated one long term symptom or more was reported by 80% (95% CI 65–92) of COVID-19 patients [3]. Long COVID therefore often demonstrates multi morbidity, with financial and social impacts such as job loss and sickness absence.

Prior to the pandemic, in the UK around 50% of workers were leaving the workforce between the ages of 50-64 (ONS 2014) and the additional impact of the COVID -19 pandemic will seriously impact existing labour shortages.

Long COVID is therefore the sting in the tail of the pandemic and this paper pulls together the experience of services developed to support individuals with this condition and enable recovery and where possible, return to work.

2. LONG COVID

Though 80% of people with confirmed COVID-19 have mild symptoms, 10%-15% can develop more severe symptoms such as pneumonia, acute respiratory distress, or multisystem organ failure [4]. Between 5-36% of people recovering from COVID-19 can still experience a variety of symptoms weeks or even months after infection. The figure below summarises current prevalence of symptoms after acute infection (adapted from https://kce.fgov.be/nl/behoeften-en-opvolging-van-pati%C3%Abnten-met-langdurige-COVID)[5].

Fig. 1: Prevalence

Median (range)	< 3 months	3-6 months	> 6 months
Hospitalized	32% (5-36%)	57% (13-92%)	60%
Non-hospitalized	51% (32-78%)	26% (2-62%)	25% (13-53%)

Risk factors[6] for prolonged problems include specific immune patterns in the blood [7], the initial 'load' of virus in the blood, reactivation of Epstein-Barr virus, experiencing multiple symptoms during the acute phase and existing illnesses such as diabetes [8]. Several studies have shown that women are more commonly affected than men, but it is not known why.

Long term complications of COVID-19 may arise for many reasons including damage to cardiovascular, pulmonary, gastrointestinal, and neurological systems which lead to organ-specific sequelae (see Appendix 3) [9,10]. Multiple issues contribute to the pathophysiology of Long COVID such as Post Intensive Care Syndrome (physical, mental, and cognitive dysfunction in survivors of critical illness), symptoms related to hospitalisation, and symptoms caused by acute COVID-19. Different mechanisms have been proposed to explain the symptoms observed in multiple organs. Despite the different mechanisms, a recurring observation is the impact of (neuro) inflammation, endothelial cell dysfunction and (micro)vascular abnormalities [11-17].

Patient groups have had a key role in identifying and defining Long COVID. It was people with prolonged symptoms, after their initial infection, who first noticed the patterns of illness.

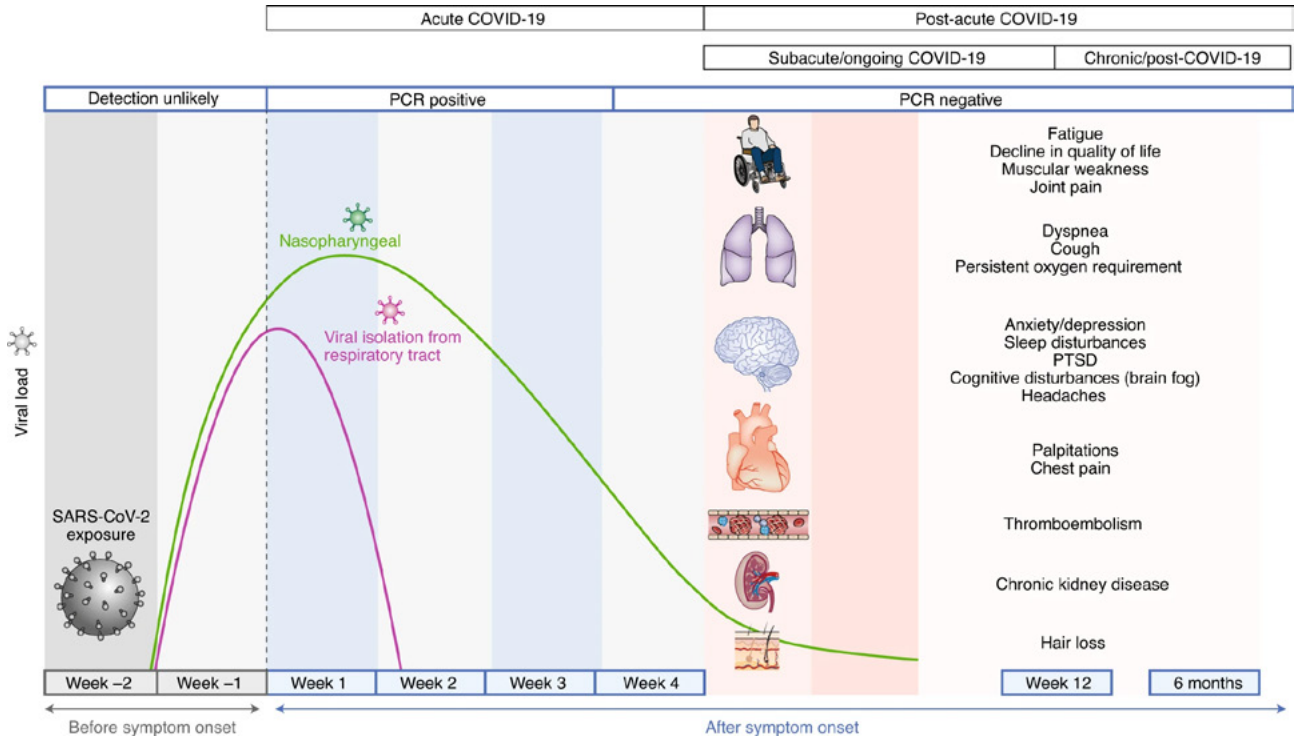
2.1 At-risk occupational groups

COVID-19 incidence varies according to the mitigations implemented in different work sectors. The highest incidence was observed in sectors where workers have close contact with other people - such as health, social and residential care, education and cultural and sport activities, or in some specific settings (poorly ventilated spaces) such as poultry slaughterhouses [17].

There is a time-point at around three months where new problems can develop. It is extremely important, therefore, to treat symptoms well before this time in order to prevent heath problems of increasing complexity and very prolonged duration. In both acute, and Long COVID, there is evidence of significant inflammatory response. Several drugs including statins, ACE inhibitors, and angiotensin receptor blockers may counteract these changes [19]. There are compelling reasons to provide treatment even in people not admitted to hospital to counteract this damaging inflammatory response [20].

We urge doctors to read Appendix 1 on treatment of the early infection.

Fig. 2: Timeline of post-acute COVID-19 (Nalbandian et al 2021)[18]



3. IMPACT ON ABILITY TO WORK

The impact of Long COVID on general health is significant, challenging normal functioning. A wide-reaching international study (Davis et al) reported that 45.2% of patients with Long COVID had to reduce their work schedule compared to the period before the illness and that 22.3% were not working (at the time of the study) for various reasons (sick leave, dismissal or resignation, unsuccessful job search)[21].

In the online survey of The Belgian Health Care Knowledge Centre [22], 60% of respondents who had symptoms lasting more than four weeks, and were in paid employment before COVID-19, were unable to work. More than a third (38%) were not yet at work at the time of the survey, and 26% part time. No significant difference was observed between hospitalised and non-hospitalised patients.

Pauwels et al. reviewed the literature on the impact of Long COVID on work, the workplace and return to work interventions in a HSE report[23]. To date, few studies have been identified on the impact of long-term consequences of COVID-19 on work and return to work.

Long COVID symptoms that seem to have the greatest impact on work and return to work are fatigue, cognitive dysfunction (such as difficulty concentrating and memory loss), and changes in taste and smell.

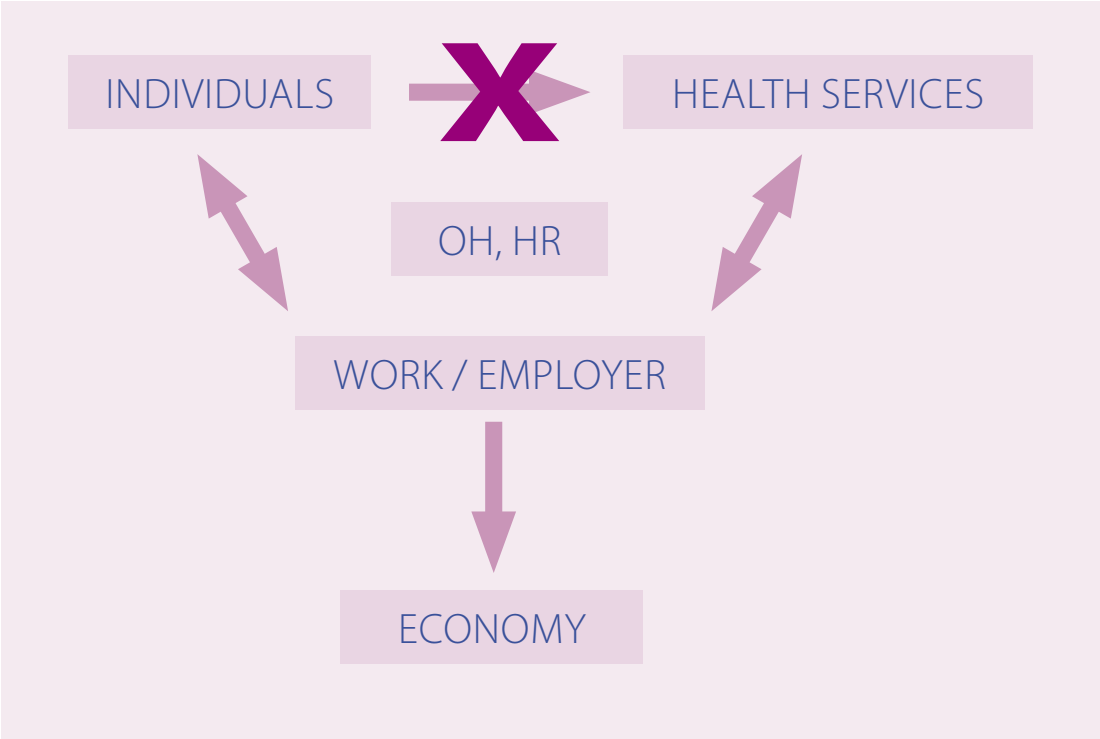
Return to work for an individual with Long COVID often needs involvement of several stakeholders: the recovering worker, employer, line manager, and health professionals. Occupational health (OH) professionals play an important role in bridging between them.

The primary goal should be a progressive, adaptive, and appropriate return to work, as well as support at work (job retention) as working is generally good for health.

The Bank of England warned in 2022 of the link between Long COVID in the workforce and the economy [24]. In addition, some parents have had to stop work to care for affected children (Long COVID Kids 2022 [25]). Employers are faced with a skills shortage, loss of talent and a reduced pool of people from which to recruit. The labour market is tight at the moment with severe skills shortages in some sectors so there is a very strong business rationale for employers putting effective support in place to help retain people. Long-term inability to work is strongly associated with job loss and loss of life years. This widens health inequalities.

There has been a lack of access to health services for people with Long COVID and a lack of knowledge amongst health professionals about the condition. OH services and Human Resources (HR) are well-placed to coordinate these efforts.

Fig. 3: Impact on workability



A NOTE ON TERMINOLOGY

"Long COVID" [26] (Callard and Perego, 2021) was first coined by people with COVID-19. It was patient groups who met with the World Health Organization (WHO) in August 2020 and instigated the request 'Recognition, Research and Rehabilitation' [27] (Lokugamage, 2020).

There has been debate on the naming of the condition and now an array of names exist. As experience builds, and following appropriate assessments, it will become possible to make more specific diagnoses and treat symptoms. For now, it is important to understand that Long COVID IS COVID-19: there is ample evidence that the same underlying pathological processes exist in those with prolonged symptoms as in those with shorter duration and those admitted to hospital. These are infection, inflammation, abnormal immune response, and abnormal blood clotting. The important question is what is happening in each individual, and then to address those problems in a holistic way.

Several definitions have been proposed. The National Institute for Health and Care Excellence COVID-19 Rapid Guideline: Managing the Long-Term Effects of COVID-19 2020 includes acute COVID-19 (up to four weeks), ongoing symptomatic COVID-19 (symptoms from four to 12 weeks) and post-COVID-19-syndrome (symptoms past 12 weeks) [28]. Long COVID can occur after any type and severity of initial illness. Symptoms may persist, fluctuate or relapse over time (WHO, 2021) [29].

When patients say Long COVID, they often mean prolonged symptoms that they have not had investigated. When healthcare staff say or hear Long COVID, they often assume pathology has been ruled out and some discount any health problem.

The above clinical definitions are based on having ruled out specific pathology. If these investigations have not taken place within 12 weeks, no such assumption should be made. A further complication is that some post-acute complications of COVID-19 start around 12 weeks.

Not being hospitalised does not mean the initial illness was mild; many people were severely ill at home but not able to access hospital.

4. ASSESSMENT OF FUNCTION

Fig. 4: Symptoms or problems which most commonly impact on function at work

Symptom or problem	Effect on function
Autonomic Dysfunction - orthostatic intolerance	Prolonged standing, sitting Endurance / Concentration
Fatigue (cognitive + physical)	Task endurance
Neurocognitive	Safety, procedures
Exertional symptoms (chest pain, dyspnoea, desaturation, tachycardia)	Physical endurance Health on work and work on health considerations
Pain	Concentration, comfort, endurance etc.
Voice dysfunction	Telephone/meetings, voice endurance
Sense of distress/traumatic experiences	Aggravates physical symptoms

It is likely that several factors combine to affect function. When assessing fitness to work, check:

- details of the acute illness, as these give clues to the cause of current symptoms (see *Appendix 2, 3*)
- current symptoms and impact on function, concerns, needs and wishes
- whether the symptoms may be related to, or are worsened by, other health conditions.

  Autonomic Dysfunction in COVID-19 can be associated with objective functional limitations even in the absence of subjective symptoms [30].

Exertion is contraindicated in any person following COVID-19 who has:

a. *uninvestigated chest pain* as the risk of exercise induced sudden cardiac death if it is due to acute myocarditis is high
b. *post-exertional symptom exacerbation* (PESE) as this risks worsening disability [31].

See *Appendix 6* for specific fitness for work considerations.

People with Long COVID say that the most effective measures for return to work and function have been:

- Advice to rest in the first stages
- Early advice on how to self-manage activity pacing
- An initial face to face assessment, with tailored, usually virtual, follow up
- "The right tests at the right time" and early treatment of symptoms
- The importance of peer support groups [32]
- "Nothing about us, without us."

Peer support groups have been helpful either for general support or for specific topics such as management of specific symptoms, sharing of ideas and problem-solving.

5. WHAT IS REQUIRED

5a. Early intervention, integration, and rehabilitation

Adequate rest in the early stages and avoidance of strenuous exertion whilst symptomatic is thought to promote recovery and has an evidence base. If symptomatic at four weeks, as per national guidance the individual should be medically assessed[33]. A face to face appointment is necessary for a baseline physical assessment to identify treatable traits and rule out red flag conditions, which are known to be associated (see Appendix 2, 3) and as laid out in June 2022 protocols[34].

Early intervention[35, 36] involves:

- Referrals to relevant specialists. *Appendix 3*
- Treatment for symptoms – improves daily functioning. *Appendix 4*
- Rehabilitation for specific impairments to improve or maintain function. *Appendix 5*
- Peer support and use of patient advocates
- A multidisciplinary approach

An established body of occupational and rehabilitation literature on many health conditions has shown that **early intervention leads to early recovery and early return to work**. We should seek out and intensively assist those who have been ill for more than two years.

Integrating systems involves:

- Links between occupational health (OH) services, Long COVID clinics and primary care. Access to imaging and relevant specialists
- Standardised health screening template for first line use in all health settings
- Multi-disciplinary initial assessment, in one location, modelled, for example, on pre-operative assessment clinics
- Possible OH roles: providing linkage between services; advise and procure relevant health services (*Appendices 2, 3, 4*) and COVID-specific rehabilitation services (see *Appendix 5*)
- Health commissioner 'buy-in'. Senior management support and links with Trades Unions and worker representatives.

Rehabilitation is critical, using a personalised goal setting approach. The rehabilitation pathway to enable a return to work may be multifaceted and require the support of several Advanced Health Professionals (AHPs). These may include dieticians, occupational therapists, psychologists, speech and language therapists, physiotherapists and exercise physiologists. Occupational Health Services have increasingly worked with AHPs to develop and transform services and the COVID-19 Pandemic has provided opportunities for greater integration between OH and AHPs.

5b Support of employers, the line manager and HR

Nearly half of employers have employees with Long COVID in the past 12 months and one in four employers now include Long COVID among their main causes of long-term sickness absence [37]. HR professionals need to work closely with OH, line managers and the employee to review the job role and consider each case on an individual basis to agree what support and adjustments will be the most helpful. (The CIPD has developed a Long COVID Hub – see https://www.cipd.co.uk/knowledge/coronavirus/long-COVID#gref) [38].

A Scottish court recently ruled that an employee with Long COVID had a disability and required work adjustments. Other cases will depend on the facts of each case. [39]

Recent research funded by the CIPD and conducted by Affinity Health at Work and Sheffield University examined the barriers and facilitators to support individuals returning to and working with Long COVID[40]. Drawing on experiences of employees, employers and health care professionals, findings indicate that a whole system approach to supporting individuals in work is required. The IGLOO framework, identifying the role of the ***individual*** with Long COVID, their ***group*** (team members, work group), their ***line manager***, their ***organisation***, and ***outside resources*** (e.g. NHS clinics), outlines that everyone has a role to play in a successful and sustainable return to work. Importantly, findings highlight the need for a prolonged period of return, extending beyond the four-week phased return to a phased return over many months.

One way that supervisors can provide effective support for team members experiencing Long COVID is to follow the **PIES** principles which have been shown to be helpful in preventing short and longer term mental ill-health. These four principles can be enacted by supervisors, or in community settings by trusted colleagues or family members. Within PIES, **P**roximity denotes active supportive management within the workplace; **I**mmediacy refers to adopting a 'nip it in the bud' approach; **E**xpectancy means communication and anticipation of recovery, or if needed early professional help, and **S**implicity refers to the use of brief, uncomplicated intervention(s) such as problem solving[41].

While many people with Long COVID return to work and stay in and thrive at work, some require appropriate support and work adjustments to do so. However, there is a significant gap in the confidence and capability of organisations in providing the necessary support. For example, CIPD research [40] finds just 28% of respondents believe their organisation does not experience any challenges in managing and supporting people with a disability and/or long-term health, with 'developing line manager knowledge and confidence' reported to be the most common challenge (reported by half of organisations experiencing challenges). And yet the majority of organisations (61%) rely on their line managers to take primary responsibility for managing long-term absence [37]. With only a third (32%) of organisations providing line managers with training or guidance to support people with long-term health conditions it is not surprising there is a capability gap.

There is a pressing need to support employees with Long COVID to return to and stay in work, which is in the interest of individuals, employers and the wider economy. Line managers have a key role to play in a number of ways – they have day-to-day contact with the employee, are typically responsible for keeping in touch during sickness absence, manage the return-to-work process and implement reasonable adjustments. They also refer to expert sources of help such as OH and Employee Assistance Programmes. Crucially, organisations need to take a flexible approach as part of their sickness management framework, to support the fluctuating and unpredictable nature of symptoms and ongoing recovery from COVID-19.

Senior leaders and HR professionals need to take a strategic response, informed by OH specialists. Their policies and approach also need to recognise the importance of supporting employees to manage their own health and condition, and how they can practise self-care.

5c Early planning for return-to-work participation

Long COVID resembles the characteristics of many chronic health problems: with fluctuating physical and mental symptoms, unclear diagnosis, unknown prognosis, and inability to predict those who will need most help. In principle, the optimal way to tackle these unknowns is with an evidence-informed early stepped-care approach based on biopsychosocial principles. This is an appropriate model for tackling the complex issues around work participation, making efficient use of limited resources [42].

The 'bio' component should be recognised and treated, albeit that this may comprise symptom management initially. More complex support can be reserved for those whose symptoms persist. If specific pathology is identified at a later stage, its impact on participation should be managed with appropriate medical (or rehabilitative) intervention, stepping up to specialist respiratory, cardiac, and cognitive rehabilitation, or involvement of occupational health (OH) services, as required.

People experiencing Long COVID, especially those with multiple symptoms, are uncertain and at risk of misinformation. They are uncertain about whether (and when) things will improve, and whether they should try to participate (in everyday activities as well as work). People do not cope well when they are uncertain, so the 'psycho' aspect needs to be addressed with acknowledgement of their concerns, along with accurate information that reduces fear and uncertainty, explains the often-prolonged symptom experience, and sets positive, yet realistic, expectations. A 'can't do' approach is not helpful, nor is a boom-bust cycle of doing too much too soon. The preferred 'can do' alternative must be tempered with pacing.

Because work disability sets in remarkably quickly, the topic of return-to-work should be raised in a supportive way as soon as possible with people who are struggling to get back to work. What most people with Long COVID struggle with is work-relevant symptoms. Not all symptoms, though, are work-relevant – it depends on the demands of the job – those that are work-relevant need to be accommodated by job modifications. People with Long COVID say that this should entail flexible, regularly reviewed, long-term return-to-work planning addressing multi-level work ability obstacles, co-developed between workers and line managers, with support from human resources, OH professionals, and a COVID-aware organisational culture [43].

Planning must be taken seriously by all involved. A Return-to-Work (RTW) Plan is the crucial element of helping people with health problems achieve a timely return [44]. Building the plan is a collaborative process that involves the person – they know their health and their job but will need help from others on the journey back to work. The key aspects are:

- Focus on what can be done, not what cannot
- Ensure all players are onside and supportive
- Identify the obstacles to the person's RTW using a biopsychosocial framework (the things they feel are making it difficult to return to their job)
- Work out the actions that will overcome those obstacles (temporary job modifications, pacing, time off for treatment etc.)
- Ensure any healthcare is work-focused (setting work as an important health outcome)
- Negotiate and agree those actions with the line manager (and health professional)
- Agree a RTW date and timeline for actions (including transitioning back to usual job (or move to different job))
- Agree a review schedule (to allow for revising the Plan)

The fundamental message is that the important goal of getting back to work with Long COVID is possible, yet it might not be a straightforward linear process – the road may be bumpy and winding but, with the right support, the destination can be reached. Many organisations and line managers view return to work as a one-off event, but it's vital that there is an ongoing dialogue between the individual and their line manager (and OH if necessary) to ensure that any adjustments and support are still effective, or to discuss whether new ones are needed.

CS1: THE UK DEFENCE MEDICAL REHABILITATION CENTRE (DMRC) COVID-19 RECOVERY SERVICE

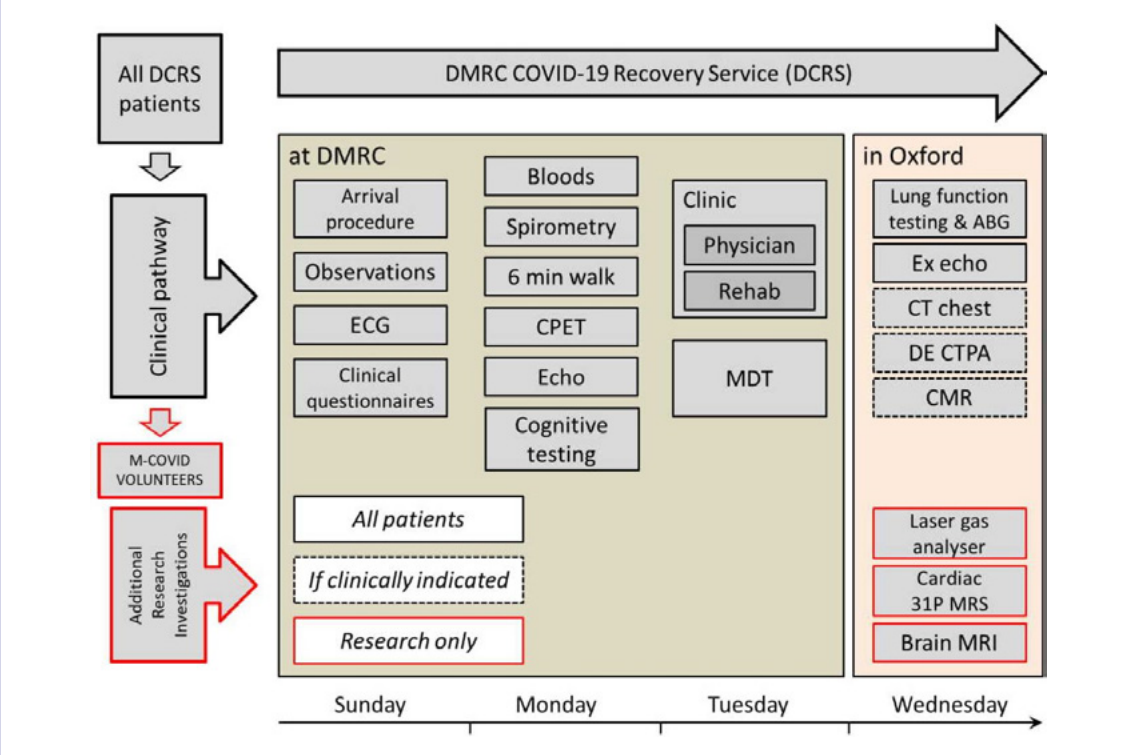
The UK Defence Medical Services produced Recommendations on the Management of later COVID sequelae in April 2020, known as the Stanford Hall Consensus [36]. Evaluation of the DMRC COVID recovery service [46] showed that 80-90% of the workers returned to full duties within three months of illness onset. By January 2022, cumulative data on approx. 400 cases presented at meetings showed that 90% return to work within three months.

Whilst a proviso is that the population studied was particularly physically fit, it is also a striking feature in civilian populations with prolonged problems after COVID that many people had extremely high levels of prior physical fitness. It is likely that adequate advice for early rest, combined with tailored early intervention and rehabilitation, would lead to similar outcomes in other populations.

Key features of programme

- Emphasis on adequate rest in the first few weeks of illness
- Clinical management (see figure below) – takes an evidence-based safe approach to management of cardio-respiratory symptoms and exertion
- Peer support groups focused on specific topics
- Tailored physical rehabilitation.

The content and evaluation are explained in this short video. [46] (BBC)



This model demonstrates an integrated model of care providing a balance between enough early rest, followed, if necessary, by key investigations to rule out serious medical problems which may impact on fitness for work. As many assessments as possible are done in one clinic visit.

CS2: NORTHERN IRELAND

There was a significant delay in bringing forward proposals to support people experiencing longer term effects of COVID-19. The community-based service commissioned is a single assessment and onward referral to other services, with no automatic medical assessment or funding for onward review of individuals.

Current service delivery is not in accordance with NICE recommendations on managing the long-term effects of COVID-19 (NG188). Absence of direct referral pathways to appropriate specialist services and diagnostics is compounded by waiting lists already at crisis point. No data is currently held by the NI Department of Health on waiting times for post-COVID services. Referral pathways to the post-COVID services in NI were agreed regionally, under the direction of the Department of Health, with direct referral from occupational health (OH) to the community-based service prevented. Some of the five Health Trusts have established in-house post-COVID rehabilitation services for Trust staff, however there is considerable variability and inequity between Trusts at present ranging from fully staffed services to no specific engagement at all.

Several meetings have been held between The Society of Occupational Medicine (SOM) and the NI Department of Health in relation to supporting workers with Long COVID, particularly with respect to the value which can be added by early OH intervention [47] and establishment of a direct referral pathway from OH to post-COVID services. Direct referral to post-COVID services from all OH services would help improve equitable access and timely availability of rehabilitation support to those most in need.

CS3: WALES – ALLIED HEALTH PRACTITIONER-LED LONG COVID SERVICE, SUPPORTING A RETURN TO WORK IN NHS OCCUPATIONAL HEALTH

An Occupational Therapy (OT) Long COVID service was established in November 2020 for Swansea Bay University Health Board staff members. Staff presenting with Long COVID symptoms are referred via the occupational health (OH) management referral triage or as referrals from OH clinicians. The aim has been to provide NHS staff with support to enable them to self-manage their symptoms more effectively, to signpost to other clinical services/sources of support and advice and to provide vocational advice and recommendations to line managers to facilitate a return to work. Individuals are offered an initial OT assessment, followed by a review appointment and if appropriate, follow-up sessions. The average wait from referral to first appointment is 18 days, demonstrating an early intervention approach. The virtual initial assessment includes an understanding of the impacts of Long COVID on daily functioning and ability to work, with self-management advice, virtual peer support group and signposting or referral to other clinical services. The main presenting symptoms have been fatigue, shortness of breath, cognitive difficulties related to concentration and memory ('brain fog'), anxiety and joint pain. Intervention has focused on the provision of strategies to enable enhanced self-management and vocational advice including:

- Fatigue management (planning and pacing; realistic goal setting);
- Mood management;
- Anxiety management;
- Managing concentration/memory;
- Vocational advice and recommendations.

Signposting/onward referral to other sources of intervention is most frequently to community Long COVID Rehabilitation Services; Occupational Physician; Long COVID App/self-help resources; General Practitioner and Staff Wellbeing Service and Human Resources.

A peer support group programme for staff was established to inform participants of self-management strategies and promote on-going peer-support. The four-week programme covers:

- **Managing Fatigue:** understanding 'boom and bust' cycles and pacing
- **Self-care:** undertaking self-care inventory, diet, sleep, and support networks
- **Managing Mood:** understanding anxiety, self-compassion, mindfulness, and relaxation
- **Moving Forwards in an Uncertain Future:** considering goals and support needed, including work.

Outcomes have been measured using standardised assessments (EQ-5D-5L and Brief Fatigue Inventory). Average pre-and post-intervention scores improved. The Visual Analogue Scores used to quantify the health outcome in the patient's own judgement show improvements both in fatigue levels and general health status.

Outcomes for the first 98 staff members assessed by the service demonstrated:

- 32 individuals referred to Community Long COVID Rehabilitation Service for further input
- 31 reports provided to managers with recommendations for managing return to work
- 8 individuals referred to Occupational Health Physician for assessment.

This case study highlights the effectiveness of early intervention, in particular advice on pacing by OTs and shows a rapid response to a new clinical problem requiring integration between OH and OT. It is suitable in regions where Occupational Health Professionals are scarce but is supported by communication and referral pathways.

CS4: ENGLAND – OCCUPATIONAL HEALTH PHYSICIAN AS MEDICAL LEAD FOR LONG COVID (POST COVID) SERVICE

NHS England has funded 90 Long COVID Assessment Clinics across the country for patients who have been hospitalised, officially diagnosed after a test, or reasonably believe they had COVID-19. The Derbyshire Post COVID Service is a single point of access to all Long COVID Services across the county. Service Structure:

- Three Leads (Medical; Allied Healthcare Professional; Service Manager)
- Medical Lead provides strategic medical direction for the Derbyshire Post COVID Service and the Long COVID Health and Social Care Staff Support Service.
- Medical specialist multidisciplinary team (MDT) every two weeks.
- Therapy MDT weekly, comprising Psychologists, Respiratory Physiotherapists; Speech and Language, Memory and Occupational Therapists, and Vocational Rehabilitation specialists.
- COVID Rehabilitation Hubs are based across the county, to meet rehabilitation needs.
- Signposting to local authority and 'third sector' organisations e.g. 'Live Life Better Derbyshire' schemes. Direct access to Citizens Advice Bureau for financial advice.
- Health and Wellbeing Support Workers.

Process

	County Service	**Staff Service**
Referral four weeks +	GP/specialist (SystmOne software)	Self, line manager, HR (email)
Pre-visit	Blood tests and investigations essential Screening Tool (Modified COVID-19 Yorkshire Rehabilitation Scale scoring system, Sivan et al 2022) [48] Red/Amber/Green triage	Blood tests and investigations preferred (Modified COVID-19 Yorkshire Rehabilitation Scale scoring system, Sivan et al 2022) [48]
Waiting list	Given self-help materials Expedite those at risk of job loss	
Baseline assessment	Sessional GP or AHP (may be face-to-face) Baseline exertional tests Prescriptions: symptomatic relief	Psychological Wellbeing Practitioner: low level psychological support, self-help material, IAPT referral If physical symptoms – refers to Clinic Co-ordinator for onward referral to specialists and/or rehabilitation professionals
Referrals	For investigations and to specialists. Complex cases to MDT Sleep studies, speech, and language assessment	
Rehabilitation	When fit, transfer to County Rehabilitation Hubs	• OH-based nurse specialist for work planning • Physiotherapy + Vocational Rehabilitation • Chronic Fatigue Services
OHP	Strategic support, coordination of services, complex cases	Also, guidance to Human Resources Return-to-work planning
Peer support	Closed Facebook group	Weekly (OHP-led) and closed groups

The peer support group "allowed me to notice patterns of illness that concerned me and to put in place systems for early advice and intervention." Materials for staff and their families have been co-authored by service users.

Outcomes

50% of those referred into the staff service (304) were at work with symptoms at time of referral and following engagement with the service this increased to 62%; 71 did not declare work status. 80/304 (26%) were off work but after intervention, 36 of these 80 (45%) returned to work.

CS4 *is an example of evolving services to meet a new need. It includes necessary investigations and referrals to clarify the key diagnoses and 'red flag' problems, and benefits from a medical lead with combined experience in general medicine and occupational medicine. It utilises key OH tenets of communication and relationships between services and knowledge of the workplace. A necessary bridge has been formed between primary and secondary care, Long COVID services and the workplace.*

What is needed to replicate this model:

- *Early intervention (from four weeks)*
- *Guidance on pre-referral tests is publicised*
- *Medical coordinator with primary or secondary care medical experience and a Diploma in Occupational Medicine would be a good combination*
- *Service Managers and Commissioner commitment.*

CS5: AUSTRALIA – POST COVID MODEL OF CARE ROYAL MELBOURNE HOSPITAL, VICTORIA

The Royal Melbourne Hospital in Victoria has implemented a model of 'learning community', with a symptom-focused approach. The model commenced at the end of 2020 and an audit was performed in August 2021.

Outcomes

Many patients had ongoing declined respiratory function, but with gradual recovery.

45% were discharged from care within six months of the initial illness. 51% were healthcare workers.

Concomitant diseases were uncovered, including Interstitial lung disease, tumours, anaemia, and mental health.

Multidisciplinary care was required:

- Respiratory physician
- General practitioners
- Psychiatrist
- Sleep neurologist
- Physiotherapist and exercise physiologist
- Music therapist
- Neuropsychologist
- Nurse coordinator
- Immunology researcher

Effective interventions needed to be underpinned by the biopsychosocial model of clinical management.

- Listening and validating
- Investigating specific symptoms of concern and excluding other illness
- Managing expectations
- Pacing activity
- Optimising nutrition and reducing (ceasing) smoking
- Reinforcing sleep hygiene
- Measure and document functional progress

https://COVID19evidence.net.au/wp-content/uploads/FLOWCHART-POST-COVID-19.pdf?=220606-212218 49

6 CONCLUSION

Return to work (RTW) after prolonged sickness absence with Long COVID needs a tailored, long-term and flexible approach. A key difference between Long COVID and other conditions is the multifactorial nature of the condition and it is important to distinguish the specific health problems in each case.

Key issues are:

- The need for early assessment (*Appendix 2, 3*) at or after four weeks, if symptoms are still impairing activities, to rule out serious and common complications
- Early treatment e.g. of inflammatory responses, cardiac and other factors (*Appendix 1, 4*)
- Effective support. The most effective COVID-19 services currently contain peer support, pacing (OT particularly helpful) and MDT access
- Safe rehabilitation requires screening for certain contraindications (*Appendix 5*)
- A sustained RTW is more likely with a prolonged phased return, regularly reviewed Return to Work Plan and flexible adjustments (*Appendix 6*). Occupational health and Vocational Rehabilitation professionals are well placed to communicate with all parties and assist.

This paper calls for:

- Equity of access to return-to-work services for people with Long COVID
- Continue to work with people living with Long COVID to co-produce solutions
- Education of doctors and health professionals in Long COVID
- Systems for timely referral to specialists (especially cardiac, respiratory, neurological)
- Occupational health availability to advise employers
- Organisations to review their absence management and flexible working practices to ensure that they are flexible and supportive. Line managers should receive training and guidance in sickness absence management and how best to support employees with long-term fluctuating health conditions like Long COVID
- Psychological support to help manage stresses of living with this illness.

APP1: FOR DOCTORS. LESSONS FROM PREVIOUS EPIDEMICS: THE IMPORTANCE OF EARLY TREATMENT OF THE BODY'S INFLAMMATORY RESPONSE IN VIRAL ILLNESSES

During the COVID-19 pandemic, it is estimated that more than 22 million people have died [50]. Those who have died have had elevated plasma levels of pro-inflammatory cytokines, coagulation abnormalities and widespread derangements of innate and adaptive immunity. These findings are associated with endothelial dysfunction [14, 15]. Several treatments for COVID-19 have been tested (antiviral drugs, convalescent plasma, monoclonal antibodies) but most are difficult to administer, expensive, or limited in supply. Most target the virus, not the host response to the infection. No specific treatment has been available for most patients, although many of them could probably have survived.

Several generic drugs including statins, ACE inhibitors, and angiotensin receptor blockers (ARBs) counteract these changes in other infections and have significantly improved outcomes [19]. Clinical studies suggest they might improve survival in patients with COVID-19, other pandemic infections and perhaps even Long COVID [51]. Most physicians are familiar with them because they have used them to treat patients with cardiovascular diseases. The drugs are inexpensive and widely available in resource-poor countries.

Generic drug combinations including statins, ACE inhibitors, and ARBs could be critically important during the early months following infection. If shown to be effective, they would be available to everyone with access to basic health care and could be used in all countries on the first pandemic day.

There are compelling reasons to undertake clinical studies to show whether host response treatment with generic drugs will work in COVID-19 [20]. This idea has also been proposed for treating patients with pandemic influenza and Ebola. Unfortunately, it has received no support from health agencies or major foundations. Nonetheless, these studies should be a central element of pandemic preparedness in all countries. To not undertake them would represent a colossal failure of both scientific and political imagination. For the next pandemic, the consequences of such failure could be unimaginable.

Acknowledgements

The author received no financial support for writing this article and declares no conflicts of interest.

APP2: UNIVERSAL FIRST-LINE SCREENING ASSESSMENT IN LONG COVID [33, 34, 52, 53]

Location: primary/community care/Long COVID clinic/hospital clinic.

Timing: from four weeks (earlier assessment if clinically required). [29]

All patients with cardiorespiratory symptoms should be advised to avoid significant exertion until seven days after symptoms have ended. **Exercise is contraindicated in any patient following COVID who has UNinvestigated chest pain – the risk of exercise induced sudden cardiac death in acute myocarditis is high** [54, 55].

History

- Document symptoms in the acute illness. This gives indicators to organs affected and next actions. Having multiple symptoms when first ill is a risk factor for Long COVID [8]
- Symptoms and effect on function now
- Screen for Post-exertional Symptom Exacerbation (PESE) [56]
- All clinicians to **document work status**. "Work is a key goal and a health outcome." [57]

Work status questions: What is your job? Are you off sick? For how long? If working, are you managing full normal duties? Advise the worker to keep contact with the workplace and keep some daily structure at home, as these are beneficial in returning to work.

Discuss a fit note with the patient: can be used even if the person is at work, to communicate with the employer about adjustments. This is the responsibility of GP, hospital doctor or AHP who currently has clinical responsibility, so that workload is spread [58].

Six weeks' absence is a 'red flag' for poor health and work outcomes; suggest write on the fit note "requires occupational health referral".

Blood tests

- FBC: for lymphopenia, increased MCV
- If fatigue (most people) or lymphopenia, consider reactivation of common viruses: viral serology EBV, HPV, HSV, VZV, CMV. For EBV serology, seek expert advice
- Gastrointestinal: Liver Function Tests, Iron studies-including ferritin, Vitamin D level (or treat)
- Renal: Urea & Electrolytes, eGFR
- Endocrine: HbA1C, Thyroid function tests including autoantibodies (post-viral thyroiditis not uncommon).

Clotting

There is a rapidly increasing body of medical evidence that blood clotting occurs in Long COVID [35, 59]. Large blood clots (legs, brain) can occur, as can widespread microclots [60]. Ongoing blood clotting causes lung problems, even when the initial illness was mild [61]. Treatment is necessary.

- Prothrombin and aPTT, D-Dimer (though these have limitations, they are easily available and may indicate problems). N.B. D-Dimer more useful in acute situation, likely to be negative in longer term situation.
- Peripheral venous O2 saturations should be part of every screening blood set. They are very quick and easy to do and if abnormal point to clear pathology in the form of tissue hypoxia. The sample is taken from the antecubital or other peripheral vein; perform venepuncture, release the tourniquet for one minute and then aspirate blood.
- Plasma Viscosity + screening question, "How easy/difficult is it to take your blood (compared to pre-COVID)?

Physical examination and assessment

Cardiorespiratory

- Baseline exertional test chosen according to the level of the person's current ability. Always screen for PESE first [56].
- Screen [62] for oxygen desaturation sitting, lying, and on exertion. This is a red flag – refer to Respiratory Medicine. Cause unknown but occurs commonly in Long COVID, the same as in acute COVID. Desaturation is NEVER normal - this includes desaturation of >=3% within the normal range - must refer to respiratory physician.
- Chest X-ray if not had since start of illness.

Autonomic dysfunction (also known as dysautonomia) occurs commonly in COVID-19 [63]. Clinically relevant objective abnormalities occur even in people without symptoms [30]. Physicians and AHPs with relevant training should acquaint themselves with assessment [64].

- Postural assessment of heart rate and blood pressure (NASA Lean test, or sitting/standing after 10 minutes) [65]. If negative this does not exclude inappropriate sinus tachycardia (IST) which also needs to be excluded as can be very debilitating. IST can be detected on a 24 hr ECG monitor.

- Skin-scratch test for dermatographism (a simple screening test suggesting mast cell activation syndrome [MCAS]): redness lasting for more than one hour suggests an abnormal inflammatory response.

Signpost support services

- Counselling and other psychological support services
- Some may benefit from trauma-related psychological support
- Community advice services including financial and debt advice
- Peer support (see *Appendix 5*)

Further assessment according to symptoms or problems – *Appendix 3* (below).

APP3: RED FLAGS & SPECIALIST REFERRAL

'Red flags'	2nd line assessment	Referral to
Allergic reactions including MCAS [66,67] New food intolerances Urticaria and **angioedema**	Photos Symptom diary	Dietician Immunology - only some will accept referral
Autonomic Dysfunction [68] (Common for an infection to trigger)	• 24-hour BP and Pulse monitoring on Home Autonomic protocols • 12 lead ECG • Tilt testing may not be tolerated by patients and cardiopulmonary exercise testing may cause PESE. Beware the fluctuating nature of autonomic dysfunction; patients may or may not meet criteria on different days, and even depending on the time of day • May still have disabling Orthostatic Intolerance if they become symptomatic on standing, even if do not meet criteria for PoTS or postural hypotension on Nasa lean test • Lying and standing trans cranial Doppler to assess for a significant reduction in cerebral blood flow (and therefore cerebral perfusion pressure on standing) may be helpful	Cardiologist/neurologist with interest in Autonomic Dysfunction especially if: • blood pressure fluctuating • hypertension • difficulty in diagnosis. Autonomic neurologist 1. Severe autonomic features 2. Multiple autonomic features 3. Severe sweating dysfunction
Cardiac [69] Tachycardia-Autonomic or Inappropriate Sinus Tachycardia (IST) **Arrhythmia** **Myocarditis** Pericarditis **Chest pain including Angina (microvascular)** Coronary syndromes increased 12 months after [71,72]	ECG, 24-72 hour and diary Standard transthoracic echo is not sensitive enough to exclude i. myocarditis ii. micro vascular angina iii. micro infarction Cardiac MRI – ongoing chest pain or breathlessness on exertion	Referral pathways Detailed protocols in American cardiac guidelines [70] Referral as per usual protocols, including Rapid Access Chest Pain Clinic
Coagulation [35] **Thromboses and emboli Can occur up to a year after infection** **Lung [73], stroke, TIA, Limb embolus or venous thrombosis. Pain, discolouration, swelling in limb**	• Antiphospholipid Panel • Peripheral Venous O2 (Lack of uptake of oxygen by organs. May indicate microemboli) • Blood film for fluorescence microscopy (light microscopy less-good alternative) looking for Microclots + platelet clumps [74]	Usual acute referral pathways

'Red flags'	2nd line assessment	Referral to
Endocrine New diabetes [75] Adrenal insufficiency Thyroiditis Testicular pain and swelling Menstrual cycle disruption [76, 77]	0900 cortisol- if <300nmol/L perform ACTH stimulation test TFTs, autoantibodies Sperm count, testosterone Female hormone panel	Endocrinology as usual
Fatigue screen [78]		
Gastrointestinal [79] Hepatitis COVID colitis coeliac disease malabsorption (autonomic dysfunction, viral) acid reflux gastroparesis	Stool MC+S, virology Coeliac antibodies Faecal calprotectin	Usual criteria Hepatic services Gastroenterologist Endoscopy services Neuro-gastroenterologist Dietician
Neurological [80,81] Migraine + cluster headache Peripheral neuropathy Encephalitis Myelopathy rarer Neurological sleep apnoea Cranial nerves 1,2, 5, 8, 9, 10	Low threshold for CT/MRI brain **-symptoms/signs of encephalitis** -in acute phase e.g. delirious -cognitive symptoms Olfaction, vision, hearing loss dizziness, nausea, swallowing	Neurology + usual criteria e.g. **Neuropsychiatric symptoms** **Focal neurology**
Neurocognitive [82] (multifactorial cause) May improve with time when underlying factors e.g. oxygen desaturation improves Speech [84] (Dysphasia, dysarthria)	Cognitive assessment e.g. Montreal Cognitive Assessment by occupational therapist	Formal neurocognitive tests [83] if significant impact on daily life or objective evidence of dysfunction or significant impact on work or job demands it
Neuropsychiatric Limbic encephalitis [85], NMDA autoimmune encephalitis Transient global amnesia Severe depression PANS/PANDAS	Streptococcal antibodies GPCR antibodies	Neurology Psychiatry
Recurrent fever	Temperature charts	Infectious Diseases
Renal Glomerulonephritis (rare)	Urinalysis	Usual criteria

'Red flags'	2nd line assessment	Referral to
Respiratory [61] ALL doctors should know that a negative CTPA only excludes larger pulmonary emboli	Advanced pulmonary function tests (gas transfer factor) Abnormal peripheral venous blood gas/ low o2 saturations, breathlessness and must have a V/Q scan If patient complains of breathlessness and resting SpO2 normal, carefully get them to exert to the level that provokes their symptoms and check SpO2	**Oxygen desaturation on exertion, lying down, or rest** **Unexplained breathlessness**
Rheumatological	DermnetNZ [87]	Usual criteria
Viral reactivation on blood test	Recheck for lymphopenia Microbiological Samples Repeat COVID test	Antivirals (refer Infectious Diseases?) If recurrent, consider immune deficiency
Vision [88, 89] **Acute/severe visual disturbance**	Neurological examination	Optician, Ophthalmology
Voice [90, 91] Dysphonia common but not well-reported -Can be neurological -Vocal cord oedema	Occurs even in non-hospitalised people	ENT-usual criteria Speech and Language therapy

APP4: TREATMENT WHICH CAN HELP FUNCTION AND RECOVERY

Symptom / condition	Treatment
Allergic reactions [92] including Mast cell activation disorder (MCAS) [66, 68]	1. High dose H1/H2 blockade- may need up to quadruple doses of H1 blockers. For topical relief levomenthol is effective 2. Mast-cell stabilisers e.g. Montelukast, Ketotifen Steroids, Omalizumab Dietary adjustments
Autonomic Dysfunction Treatment can transform daily function	Multimodal treatment Non-drug [93] Drug [94]
Cardiac *Tachycardia or chest pain should not be attributed to anxiety* Autonomic Dysfunction and Inappropriate sinus tachycardia Abnormal heart rhythms Angina Myocarditis, pericarditis Falls and syncope	Seek cardiac advice Rest/non-exertion whilst symptomatic [95] Await diagnosis Heart rate control for PoTS or inappropriate sinus tachycardia improves function and rehabilitation e. beta blockers, Ivabradine [96] and/or Midodrine Antianginals Colchicine (Cardiologist)
Coagulation	**Prophylactic Aspirin**
Endocrine Diabetes Thyroiditis Peri-menopausal symptoms aggravated by COVID	 Usual care Usual care Consider HRT [97, 98] Consider changing from combined OCP; late thromboembolic phenomena have been reported
Gastrointestinal	Prebiotics and Probiotics (can be prescribed) Ensure Vitamin D and iron replete Treat acid reflux H2 blockade (cause of dysmotility is often autonomic dysfunction) Low histamine diet Other dietary interventions (avoiding food late at night, trial of gluten free diet)
Neurological	Treat migraine and other post-viral headache syndromes
Neurocognitive	Rest, pacing Targeted interventions via Occupational Therapy and Neuropsychology. Signpost to brain injury charities
Pain (joints, trigeminal neuralgia, neuropathy)	Gabapentinoid or tricyclic analgesia
Respiratory Breathlessness	Inhaled steroid if evidence of obstruction on spirometry, or of air trapping on CT thorax [99] Inspiration muscle training can be helpful for people post critical care, but response in Long COVID is mixed. (Mount Sinai Rehabilitation Innovation department, world's first Long COVID clinic. Personal communication.)[100]
Sleep dysfunction - may be due to autonomic dysfunction.	Sleep 'hygiene'- rarely effective, sleep when able including naps [101] Melatonin: high doses up to 40mg may be needed [102] Patients often have early morning waking/excessive REM sleep/insufficient deep sleep - consider Mirtazapine, Trazodone or Mianserin (a Sleep Specialist can prescribe) Sedative antihistamine
Skin COVID toes (lupus pernio)	Usual care https://dermnetnz.org/topics/chilblains[103] Fungal skin infections e.g. Pityriasis Versicolor due to lowered immunity

APP5: REHABILITATION

Occupational health departments should consider commissioning rehabilitation services for the following COVID-related impairments, as there is evidence of benefit. The combination of physical impairments, the degree of debility from the virus itself, means that a different approach to physical exercise rehabilitation must be taken. In common with other energy-limiting conditions, these patients may be harmed by 'standard' rehabilitation exercises.

Impairment	Recommendation
Difficulty swallowing	Speech and Language Therapy (SALT)
Voice disorders	Speech and Language Therapy (SALT)
Olfactory dysfunction	Management of new onset loss of sense of smell during the COVID-19 pandemic - BRS Consensus Guidelines [104]
Tinnitus	Specialist tinnitus therapy
Fatigue	Occupational Therapy (OT) [105]
Exertional symptom exacerbation (PESE)	World physio Briefing Paper [56] Occupational Therapy conserving energy [105]
Orthostatic intolerance	Physiotherapist with specific training in PoTS and exercise, as differences in approach are required in rehabilitation [30, 100, 106-109]
Breathlessness	Respiratory physiotherapy: the evidence for pulmonary rehabilitation in other conditions relates to the exercise component and cannot be extrapolated to people with LC/dysautonomia. (Mount Sinai Rehabilitation Innovation department, personal communication.)
Neurocognitive	COVID causes at least mild cognitive impairment in 67%[109] OT, Neuropsychologist
Psychological support	Standard care Also consider trauma-focused therapy if the person has been in Intensive Care or had strongly believed they were going to die
Vocational	OT, occupational health

APP6: SPECIFIC FITNESS FOR WORK CONSIDERATIONS AFTER SARS-COV-2 INFECTION

Consider the following, even after mild infection: there may be delayed or hidden effects.

Physical exertion is contraindicated after in three clinical situations following COVID-19 illness:

- Myocarditis
- Oxygen desaturation at rest or on exertion
- Post-exertional Symptom Exacerbation (PESE) [56]

Physical exertion needs to be significantly adapted in the presence of Autonomic Dysfunction.

1. Work on health

Significant workplace exertion is contraindicated in any patient following COVID who has uninvestigated chest pain – the risk of exercise induced sudden cardiac death in acute myocarditis is high and microvascular angina is common. Anyone with myocarditis requires three to six months and an 'all-clear' from a cardiologist before returning to heavy exertion[110, 111].

'Heavy work' or strenuous exertion

The UK Defence Medical Rehabilitation Services produced guidance on this in April 2020 [36] and this has been followed by European guidelines [112, 113]. Cardiac clearance is required before strenuous activity.

2. Health on work

Safety-critical duties

Cognitive effects may not become apparent until return to work.

Cognitive dysfunction is extremely common in people who have prolonged effects from COVID-19. People whose duties involve safety-critical tasks should receive assessment for cognitive defects which may be subtle. The Australian Civil Aviation Safety Authority provides comprehensive guidance on the potential neurocognitive effects on function. A similar approach would be required in any other safety-critical work situation[114].

Autonomic dysfunction, especially orthostatic intolerance is almost universal in people with prolonged problems after COVID [115].

APP7: EXAMPLES OF WORKPLACE ADJUSTMENTS WITH LONG COVID

The most effective workplace adjustments specific to Long COVID are:[116]

1. Prolonged phased return
2. Individualised recovery and rehabilitation plans
3. A Return-to-Work Plan [45]

Because of the duration and impact of post-COVID symptoms, people may need a gradual return to work, also known as a 'phased return.' A 'standard' four-to-six-week phased return is unlikely to be adequate in people who have had very prolonged problems with COVID. Workers and occupational health professionals have found that starting with minimal hours and building up very slowly over many months is required and leads to a sustainable return. Starting too soon and building up too quickly has been associated with rapid relapse and further absence.

The approach should be similar to that used for energy-limiting conditions such as myalgic encephalomyelitis, multiple sclerosis, cancer and inflammatory rheumatological disorders.[117]

Modifications should be tailored to the individual and depend on their specific symptoms, limitations in functioning and job role. In many cases, the condition may be defined as a disability in legal terms. An occupational health practitioner can give guidance on this matter.

The manager should be aware that:

- The condition is also known to fluctuate and that there will be good days and bad days.
- The prognosis is not known though future treatment options may become known.
- Cognitive issues because of the virus present in a comparable way to other forms of brain injury. The condition may affect any part of the body and the worker may need specific adaptations.

Workplace Modification	Example
Altered timing	Of starts, finishes, and breaks
Altered hours	Shorter days, days off between workdays
Altered patterns	Pacing. Regular and/or additional breaks
Altered shifts	Consider suspending late or early shifts and/or night duty, so the individual works when at their best
Workload	Fewer tasks than normal within a timeframe More time to complete usual tasks Not being required to work to tight deadlines
Altered tasks	Temporary changes to duties or tasks
Support	Clear line of help Someone to ask or check with –'buddy' system Time off for appointments Not working in isolation 'Phone a friend' peer support
Location	Working from home Near a toilet
Aids	Voice recognition software, remote meeting software
Physical modifications	Advice and assessment should be taken from relevant occupational and workplace professionals

COVID-19 return to work guide For managers: 2021 The Society of Occupational Medicine.
https://www.som.org.uk/COVID-19_return_to_work_guide_for_managers.pdf

The worker can be advised to contact Access to Work who will assess and consider the provision and (partial) funding of aids, equipment, services, and transport to work for any worker including those self-employed.
0800 121 7479
https://www.gov.uk/government/publications/access-to-work-factsheet/access-to-work-factsheet-for-customers

APP8: PREVENTION OF INFECTION: RISK MANAGEMENT IN THE WORKPLACE

Employers' legal duties

- General duty under Health and Safety at Work Act 1974 Sections 2 and 3 to manage risks to employees and anyone else affected by their business, the need to carry out health and safety risk assessments and take reasonable steps to protect everyone from harm, including those most vulnerable to COVID-19 [118].
- Risk assessment and control of risks in the workplace: The Management of Health and Safety at Work Regulations 1999 Regulation 3 "Every employer shall make a suitable and sufficient assessment of (a) the risks to the health and safety of his employees to which they are exposed whilst they are at work; and (b)the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking" [119].
- Control of Substances Hazardous to Health 2002 Regulations (COSHH), employers must protect workers who encounter COVID-19 directly through their work or due to their work activity, such as health and social care workers caring for infectious patients [120].

"Five steps to risk assessment" (HSE) [121] applied to SARS-CoV-2:

1. Hazard

Biological, coronavirus (SARS-CoV-2), hazard category 3; causes a notifiable disease

2. Exposure risks

Primary route of exposure: **airborne**[122] **by aerosol** (like SARS-1, measles, TB, chickenpox)

At-risk workers – Decide who is at risk, and how

Risk of Long COVID increases with each reinfection

3. Management in the Workplace: COVID Hierarchy of Control

Source controls e.g. elimination of interactions; working practices; screening / testing / masking of people; isolation with infection (support needed), containment, spacing.

Pathway controls e.g. clearance- ventilation ++, HEPA filtration etc; barriers (work practices, 'administrative measures').

Receptor controls e.g. Respiratory Protective Equipment (RPE); For healthcare workers – at least FFP3

4. + 5. Record and **review** risk assessment.

Risk Assessment and Control Measures

While the UK Government no longer requires COVID-19 control measures as a legal requirement, employers remain required by law to protect their workers, and others, from harm. Assessing risk is just one part of the overall process used to control risks in the workplace. Employers must continue to update risk assessments and risk management approaches to safeguard worker health and minimise infection risk. From 1 April 2022, employers can choose whether to consider COVID-19 specifically, or as part of their overall health and safety risk assessments. HSE advice and guidance relating to COVID-19 may be useful when considering health and safety measures.[123]

Employers can use their risk assessments to assist in their decision-making processes, also considering worker vaccination status and local infection rates. They should take extra care of those at elevated risk of serious illness, including those with protected characteristics. For example, disabled workers may require reasonable adjustments so they can work safely. It is crucial that employers work collaboratively with health and safety and occupational health teams wherever possible.

Communication and Consultation with Workers and their Representatives

Communication between employers and workers is key, with regular dialogue regarding practical measures being taken helpful to reassure and reduce uncertainty. Wellbeing is promoted by workers feeling valued and supported by their employer. Employers need to be led by the principles of what is fair and reasonable, respecting that many people (especially those with vulnerabilities) remain overly concerned about coming into workplaces. Clear communication about the rules and procedures workers should follow both in the workplace and at home is important, particularly should they feel unwell.

Employers should consult workers and their representatives on any changes they make that might affect their health and safety. Many factors must be considered, including risk assessments, the size and nature of the workplace, the number of vulnerable workers (or those who live with vulnerable people), caring responsibilities, public transport dependency, as well as any new disease variants or outbreaks.

It is important that employers engage with workers to understand how they feel. As well as consultation with workers at a company level, line managers should understand specific concerns of individual workers to best support them. Employers need to stay flexible as guidance and attitudes evolve. CIPD research demonstrates that most people can work just as productively from home; most people would like hybrid working (a mix of office and home working). Many factors affect professional performance, including the environment, ability to collaborate or work quietly, and workers feeling a sense of purpose and belonging. While working in the workplace may improve the performance and wellbeing of some individuals, others may be more productive working from home. Employers should consult regularly with workers to ensure that performance is balanced by their preferences, particularly relating to health and wellbeing, and be as flexible as possible.

Wellbeing and Mental Health

Risks to worker health from COVID are psychological as well as physical. These include anxiety about health and fear of infection, as well social isolation. Some may be struggling with the significant changes within society, and changes to workplace routines. If an Employee Assistance Programme or access to occupational health is available, workers should be made aware of the services provided, and how to access these.

APP9: WORKPLACE PUBLIC HEALTH MESSAGES

The best form of prevention for Long COVID is "Don't get infection in first place."

Primary prevention:

- Avoid crowded indoor places
- Layered protections – masks, ventilation, administrative controls (matched to work tasks and exposures)
- Clean air! Workplaces with adequate ventilation or air filtration [124]
- To protect people who are particularly vulnerable if they contract the infection.

Avoid reinfection

Reinfection appears to cause rapid decline in people who have prolonged problems with COVID-19. Each infection causes an inflammatory response, creating a vicious cycle from which it becomes harder to recover. Repeated neurocognitive impact appears to have similar effects as having repeated concussion[125]. Urgent epidemiological studies are required to assess the effects of repeated infections. A recent preprint indicates reinfection increases the risks of mortality, hospitalisation, and adverse health outcomes [126].

Secondary prevention (minimising the chance of Long COVID when SARS-CoV-2 infection occurs):

- REST in the early stages
- DO NOT exercise until you have had seven days clear of cardiorespiratory symptoms
- Follow the advice in the position paper above!
- If infected, stay off work for ten days (day 1= date of positive test) or until two consecutive negative lateral flow tests.

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