

## Initial Assessment of Long Covid

February 2021

In the absence of robust evidence regarding appropriate investigation and management, clinicians must keep an open mind. We consider the [Red Whale guidance on Long Covid](#) to be the most practical resource at the moment; however as this is a rapidly evolving area, please ensure you access the most up to date version of it. Another useful document is provided [here](#). We have devised this guide as a practical adjunct to the above resources; it also covers some areas that they miss. It is also vital to remember pre-Covid conditions in the differential.

### Tools for remote consultations

We are aware that this document places some of the burden of documenting symptoms on the patient. Patients can use the tools below to keep a diary of their symptoms and relevant observations. It remains vital for the GP to set acceptable parameters for each variable, and to safety net for readings outside these ranges. It will not be feasible for all patients to obtain these tools; they are simply provided as options.

Potential tools for patients	Tools for GP
Smartphone Home BP machine Finger pulse oximeter Alivecor Kardia (1 lead ECG) Thermometer Glucometer Peak flow meter	AccuRx Video consultation. <a href="#">Ardens Covid-19 templates</a> Images and data emailed by patients: <ul style="list-style-type: none"><li>- Photos of lesions</li><li>- Diaries of SpO<sub>2</sub>/HR/BP/temp/fingerprick glucose</li><li>- Rhythm strip downloads from Kardia</li></ul>

### Endocrine

Pancreas: Covid may precipitate development of diabetes mellitus; perform HbA1c

Adrenal insufficiency can occur and has many cross over symptoms with POTS/fatigue. Request a 0900 cortisol; generally should be above 300. Refer to endocrinology as appropriate.

Thyroid: Autoimmune thyroiditis has been reported- evaluate as usual with TFTs and thyroid antibodies. Pre-existing thyroid dysfunction may be exacerbated.

Testes: Sperm count, motility and testosterone levels may be affected

Ovaries. Irregular periods are reported; consider female hormone panel. Women who are perimenopausal and post-Covid may benefit from HRT. Consider changing combined OCP to a safer form of contraception; late thromboembolic phenomena have been reported.

## **Mast Cell Activation Syndrome (MCAS)**

The disorder is thought to arise due to activation of mast cells by the virus, resulting in histamine release. It remains a controversial area amongst the allergy and immunology community in the United Kingdom. [Most literature comes from the US](#). However the clinical features are extremely distressing and therefore prompt symptomatic therapy is vital.

Patients will typically present with a constellation of recurrent, seemingly unrelated symptoms.

- a. Cutaneous and systemic: urticaria, angioedema, flushing, tachycardia and dyspnoea;
- b. Gastrointestinal: cramping abdominal pain, nausea, vomiting, diarrhoea;
- c. Oculonasal: nasal congestion, rhinorrhoea, and itchy, watery, red eyes.
- d. Polyuria
- e. Cognitive dysfunction with episodes
- f. Anaphylaxis may be seen.

Note that not all patients will have all symptoms. Some will have no cutaneous manifestations so a high index of suspicion is needed in Long Covid patients presenting with multiple symptoms. Cases that do not respond or those that relapse should be referred to an allergist or immunologist.

1. High dose H1 blockade is the mainstay. Whilst the doses are off-label, their use in primary care is supported by the urticaria guidelines from the [British Society of Allergy and Clinical Immunology](#). Doses up to cetirizine 20mg bd or fexofenadine 360mg bd may be required. Do an ECG to check QTc before using higher doses, and check patient not on other drugs that can cause QT prolongation.
2. H2 blockade (famotidine 20mg bd) can be added in especially if there are GI symptoms
3. Mast cell stabilizer therapy with montelukast 10mg nocte can be a useful adjunct
4. Topical therapy with calamine OTC; if inadequate, prescribe levomenthol
5. Prednisolone can be given as a short course for persistent distressing symptoms; we would recommend the urticaria dose of 1mg/kg/day up to a maximum of 40mg/day for 3 days initially. In case of early recurrence of severe symptoms, taper subsequent courses.
6. Anaphylaxis should be managed as usual; issue an EpiPen
7. A [low histamine diet](#) has been found to be beneficial by some.
8. Signpost patients to the [UK support group](#).

## Dysautonomia

The main presentations are postural orthostatic tachycardia syndrome (POTS) and inappropriate sinus tachycardia. Symptoms of POTS include palpitations, chest pain, dizziness, nausea, syncope, chest pain, tremor and sweating, and are mainly present on standing up.

1. Perform, or ask the patient to perform at home an active stand test and arrange 12 lead ECG, 24 hour ECG and 24 hour BP monitoring. Arrange an Echo as tachycardia may be a manifestation of myocarditis. Refer to a cardiologist for further management, or in case of diagnostic uncertainty. Signpost patients to the excellent POTS support group.
2. Ensure fluid intake of 2-3 L water per day with 1 tsp salt per litre (caution in hypertension, cardiac and renal disease).
3. Small and frequent meals, and avoidance of caffeine and alcohol
4. Compression garments: RAL class 2 socks or tights; patients can buy here
5. Activity pacing is essential.
6. Cardiosselective beta-blockade e.g. bisoprolol 1.25mg od for documented tachycardia. Caution in asthma; may need alternative such as ivabradine (discuss with cardiology)

## Insomnia

This is common, multifactorial and may be extremely disabling.

Behavioural modification is key. CBT for insomnia is evidence-based, effective, and available on the NHS through Sleepstation for insomnia persisting beyond a month. Additionally, disruption of normal routines due to the pandemic can impact circadian rhythm, suggesting a role for melatonin if pharmacotherapy is being considered.

## Covid Toes/chilblains

Unlike common chilblains, these can persist for months. Manage as per NICE guidance.

## Children

A wide range of presentations are reported and should be managed appropriately depending on the clinical features. Be aware of paediatric multisystem inflammatory syndrome (PIMS).

## Fatigue and Post-Exertional Malaise (PEM)

Specific management of fatigue should only be undertaken once other pathology has been excluded. For example, fatigue may occur as part of myocarditis or MCAS; specific treatment of the primary condition is the priority.

Depending on the clinical context, screen for non-Covid [causes of fatigue](#).

Based on our own experiences and that of others with long Covid, we strongly feel that avoidance of [post-exertional malaise](#) (PEM) is a key part of fatigue management in Covid. PEM is an exacerbation of symptoms following physical or mental exertion that was tolerated by the patient prior to their illness. PEM may be immediate or delayed, sometimes by days. Return to baseline can be prolonged. Patients may go through repeated cycles of overexertion and PEM.

The CFS/ME community advocates [activity pacing](#) as a strategy for avoiding PEM. We support the use of this approach in long Covid.

The key is 'stop before you overdo it', i.e. stopping activity before symptoms of PEM occur. It is important that pacing is understood and practised properly; in the absence of any pacing resources for Covid fatigue, signpost patients to the detailed [CFS/ME booklet on pacing](#). Remember to make it clear to the patient that this does not equate to a diagnosis of CFS/ME; pacing has been found to be effective in other causes of fatigue and in exertion-related pain.

Some long Covid sufferers have found staying below their [aerobic threshold](#) (55% max heart rate) useful as a means of avoiding PEM. The formula is  $[(220 - \text{age}) \times 0.55]$ . Modern wrist-worn heart rate monitors are affordable and [becoming more reliable](#); they can measure heart rate variability (HRV) to indicate when patients need to rest. HRV is a surrogate marker of autonomic nervous system health. However there have been no large-scale studies of the accuracy of wrist-worn monitors compared to electrode-containing chest-worn heart rate monitors, and there is also considerable [variation between devices](#). Individuals need to make their own decisions about their usage.

Contrary to the NHS [Your Covid Recovery](#) guidance, we **do not** recommend graded exercise therapy (GET) as a strategy for fatigue management in long Covid. In our experience this approach is likely to result in PEM.

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