

Assessment and Testing

Evaluating and Caring for Patients with Post-COVID Conditions: Interim Guidance

Laboratory Testing

At this time, no laboratory test can definitively distinguish post-COVID conditions from other etiologies, in part due to the heterogeneity of post-COVID conditions. A positive SARS-CoV-2 viral test (i.e., reverse transcription polymerase chain reaction [[RT-PCR](#)] test or [antigen test](#)) or serologic (antibody) test can [help assess for current or previous infection](#); however, these laboratory tests are not required to establish a diagnosis of post-COVID conditions. SARS-CoV-2 RT-PCR and antigen testing are not 100% sensitive. Further, testing capacity was limited early in the pandemic so that some infected and recovered persons had no opportunity to obtain laboratory confirmation of SARS-CoV-2 infection. For information about antibody testing, see [“Using Antibody Tests for COVID-19.”](#) Healthcare professionals should also consider the possibility of SARS-CoV-2 reinfection, especially in persons with new or worsening post-COVID conditions, see [“Guidance for SARS-CoV-2 Reinfection.”](#)

Before ordering laboratory testing for post-COVID conditions, the goals of testing should be clear to the healthcare professional and to the patient. Laboratory testing should be guided by the patient history, physical examination, and clinical findings. A basic panel of laboratory tests might be considered for patients with ongoing symptoms (including testing for non-COVID conditions that may be contributing to illness) to assess for conditions that may respond to treatment, until more information and evidence is available for specific laboratory testing for post-COVID conditions (Table 3a). More specialized testing may not be needed in patients who are being initially evaluated for post-COVID conditions; however, expanded testing should be considered if symptoms persist for 12 weeks or longer (Table 3b). The absence of laboratory-confirmed abnormalities or the decision to forgo extensive laboratory testing should not lead to dismissing the possible impact of a patient’s symptoms on their daily function. Where clinically indicated, symptom management and a comprehensive rehabilitation plan can be initiated simultaneously with laboratory testing for most patients.

Table 3a. Basic diagnostic laboratory testing to consider for patients with post-COVID conditions.

| Category | Lab Test |
|---|--|
| Blood count, electrolytes, and renal function | Complete blood count with possible iron studies to follow, basic metabolic panel, urinalysis |
| Liver function | Liver function tests ro complete metabolic panel |
| Inflammatory markers | C-reactive protein, erythrocyte sedimentation rate, ferritin |
| Thyroid function | TSH and free T4 |
| Vitamin deficiencies | Vitamin D, vitamin B12 |

This work is licensed under the Creative Commons Attribution-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nd/4.0/>

This policy and procedure is not intended to replace the informed judgment of individual physicians, nurses or other clinicians nor is it intended as a statement of prevailing community standards or minimum standards of practice. It is a suggested method and technique for achieving optimal health care, not a minimum standard below which residents necessarily would be placed at risk.

Table 3b. More specialized diagnostic laboratory testing to consider for patients with post-COVID conditions.

| Category | Lab Tests |
|---|--|
| Rheumatological conditions | Antinuclear antibody, rheumatoid factor, anti-cyclic citrullinated peptide, anti-cardiolipin, and creatine phosphokinase |
| Coagulation disorders | D-dimer, fibrinogen |
| Myocardial injury | Troponin |
| Differentiate symptoms of cardiac versus pulmonary origin | B-type natriuretic peptide |

* The specialized diagnostic tests should be ordered in the context of suggestive findings on history and physical examination (e.g., testing for rheumatological conditions in patients experiencing arthralgias).

Other Assessment and Testing

Symptom inventories and assessment tools, such as those embedded within electronic health records, can help evaluate and monitor the status of post-COVID conditions. Functional testing can also be helpful to quantitatively document clinical status over time. A selection of some available assessment tools is shown in Table 4a and Table 4b. These and other measures can also be found in the [health measures toolbox](#) and American Academy of Physical Medicine & Rehabilitation’s [functional assessments](#), along with assessment tools for other rehabilitation needs (e.g., bowel and bladder function, pain, activities of daily living, cognition, mobility, sleep). Testing should be tailored to the patient’s symptoms and presentation.

Table 4a. Selected assessment tools for evaluating people with post-COVID conditions.

| Category | Tools |
|--|--|
| Functional status and/or quality of life | Patient-Reported Outcomes Measurement Information System (PROMIS (e.g., Cognitive Function 4a) |
| | Post-COVID-19 Functional Status Scale (PCFS) |
| | EuroQoL-5D (EQ-5D) |
| Respiratory conditions | Modified Medical Research Council Dyspnea Scale (mMRC) |
| Neurologic conditions | Montreal Cognitive Assessment (MoCA) |
| | Mini Mental Status Examination (MMSE) |
| | Compass 31 (for dysautonomia) |
| | Neurobehavioral Symptom Inventory |
| Psychiatric conditions | General Anxiety Disorder-7 (GAD-7) |
| | Patient Health Questionnaire-9 (PHQ-9) |
| | PTSD Symptom Scale (PSS) |
| | Screen for Posttraumatic Stress Symptoms |

This work is licensed under the Creative Commons Attribution-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nd/4.0/>

This policy and procedure is not intended to replace the informed judgment of individual physicians, nurses or other clinicians nor is it intended as a statement of prevailing community standards or minimum standards of practice. It is a suggested method and technique for achieving optimal health care, not a minimum standard below which residents necessarily would be placed at risk.

| | |
|------------------|---|
| | (SPTSS) |
| | PTSD Checklist for DSM-5 (PCL-5) |
| | Impact of Event Scale-Revised (IESR) |
| | Hospital Anxiety and Depression Scale (HADS) |
| Other conditions | Wood mental Fatigue Inventory (WMFI) |
| | Fatigue Severity Scale |
| | Insomnia Severity Index (ISI) |
| | Connective Tissue Disease Screening Questionnaire |

Table 4b. Selected functional and other testing tools for evaluating people with post-COVID conditions.

| Category | Tools |
|-----------------------|--|
| Exercise capacity | 1-minute sit-to-stand test |
| | 2-minute step test |
| | 10 Meter Walk Test (10 MWT) |
| | 6-minute walk |
| Balance and fall risk | BERG Balance Scale |
| | Tinetti Gait and Balance Assessment Tool |
| Other | Tilt-table testing (e.g., for POTS) |
| | Orthostatic HR assessment |

Healthcare professionals should use caution when conducting exercise capacity testing in some patients, especially those with [post-exertional malaise](#) (i.e., the worsening of symptoms following even minor physical or mental exertion, with symptoms typically worsening 12 to 48 hours after activity and lasting for days or even weeks). For these patients and others who may not have the stamina for extended or lengthy assessments, modifications in the testing plan may also be needed. Exercise capacity tests should be scheduled for a dedicated follow-up appointment so that patients can prepare additional home supports. Ensuring that the testing circumstances best support the patient to perform maximally and then documenting this performance can create an objective reliable record of functional status that may be needed for assessment for other services or disability.

Additional diagnostic testing should be guided by findings from the patient history and physical examination and results of previous diagnostic testing, and may include a chest x-ray, pulmonary function tests, electrocardiogram, or echocardiogram for persistent or new respiratory or cardiac concerns, although more evidence is needed to support the utility of specific imaging tests for evaluation of post-COVID conditions. For patients who may require imaging based on clinical findings, symptom management and a rehabilitation plan can often be initiated simultaneously with the imaging workup. In patients with normal chest x-rays and normal oxygen saturation, computed tomography (CT) imaging of the chest might have lower yield for assessing pulmonary disease. In patients without an elevated D-dimer and compatible symptoms, CT pulmonary angiogram may be lower yield in the context of a pulmonary embolism workup. In patients with brain fog symptoms, magnetic resonance imaging (MRI) of

This work is licensed under the Creative Commons Attribution-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nd/4.0/>

This policy and procedure is not intended to replace the informed judgment of individual physicians, nurses or other clinicians nor is it intended as a statement of prevailing community standards or minimum standards of practice. It is a suggested method and technique for achieving optimal health care, not a minimum standard below which residents necessarily would be placed at risk.

the brain might not be revealing for pathologic findings in the absence of focal neurological deficits. Further caution may be exercised in ordering imaging in children without a high index of suspicion of pathology. More specialized (e.g., cardiac MRI) imaging studies might merit consultation with specialists.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care/post-covid-assessment-testing.html>

June 14, 2021

SAMPLE

This work is licensed under the Creative Commons Attribution-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nd/4.0/>

This policy and procedure is not intended to replace the informed judgment of individual physicians, nurses or other clinicians nor is it intended as a statement of prevailing community standards or minimum standards of practice. It is a suggested method and technique for achieving optimal health care, not a minimum standard below which residents necessarily would be placed at risk.