

COVID-19 Core Outcome Measures



APTA Academies and Sections Consensus Statement

APTA's academies and sections formed the Cross-Academy/Section COVID-19 Core Outcome Measure Task Force to identify a core set of outcome measures for patients diagnosed with COVID-19, across the continuum of care and in all settings. A core set of outcome measures aids in describing the trajectory of recovery from COVID-19 and facilitates research initiatives.

Core Outcome Measures

These measures are recommended for all patients diagnosed with COVID-19 who have goals to improve in these five constructs. To ensure consistency and better understand trends in functional recovery, use these core outcome measures without substitution*:

1. Function: Short Physical Performance Battery (SPPB)
 - Provide raw score for gait speed for comparison with other patients and across the continuum.
 - Provide raw score for the 5 Times Sit-to-Stand Test for comparison with other patients across the continuum.
2. Strength: Medical Research Council Sum Score (MRC-SS).
3. Endurance: 2-Minute Step Test.
4. Cognition: Saint Louis University Mental Status examination (SLUMs).
5. Quality of Life: EQ-5D-5L (health-related quality of life measure).

Clinical Considerations

General recommendations

- These core outcome measures apply across patient populations for people with or recovering from COVID-19.
- For patients functioning at a lower level, score the test as a 0 to capture recovery continuum and inform future collaborative research initiatives. For patients functioning at either a lower level or a higher level, refer to the task force's forthcoming algorithms* to systematically progress the core outcome measures.
- Not all outcome measures must be performed on the same visit.

Screening and Monitoring

- Assess the patient for safety and ability to participate before performing core outcome measures.
- Perform an individualized safety screening based on the patient's severity of illness, past medical history, and current situation.
- Screen cardiovascular risk status prior to exercise and endurance testing, using a weighted risk-factor calculator, such as the [American College of Cardiology ASCVD Risk Estimator Plus](#).
- Screen for venous thromboembolism disease.

- Screen for cognitive function to ensure that a patient can understand the directions of other screens and core outcome measures.
- Monitor the patient's vital signs throughout examination and intervention due to the high prevalence of cardiorespiratory complications for this patient population.

Documentation

- If any outcome measure cannot be completed, score the test as a 0 and indicate the reason it was not possible to complete, such as the patient declined to participate, or the patient's delirium prevented participation. This will enable better documentation of change later in the continuum of care.
- Even if in your practice setting you might not report or track changes with each of the proposed outcomes measures, each score remains significant. The score a patient receives at your setting should be shared across the continuum of illness to serve as a baseline or intermediate time point for measuring change in later settings.

*The Task Force is developing recommendations for secondary outcome measures to provide a more full understanding of impairments, including recommendations for tests and measures for individuals across the lifespan; those with lower functional levels, such as patients still in the ICU; and those with higher functional levels, such as athletes returning to sport. The Task Force also is developing a recommendation to screen for additional impairments such as delirium, depression, anxiety, and upper extremity dysfunction.

Process

The Cross-Academy/Section COVID-19 Core Outcome Measure Task Force was organized in April 2020 and comprises members appointed by the following APTA academies and sections: the Academy of Acute Care Physical Therapy, the Cardiovascular and Pulmonary Section, APTA Geriatrics, the Home Health Section, the Academy of Neurologic Physical Therapy, the Academy of Oncologic Physical Therapy, the Academy of Orthopaedic Physical Therapy, and the Private Practice Section. Members include clinicians, academicians, and scientists who provide perspectives across the continuum of patient care and from varied clinical specialty areas.

We used available information from the United States and other countries to determine the most common impairments related to COVID-19, and then identified constructs — cognition, endurance, function, quality of life, and strength — that best reflect these impairments.

We identified key documents that section and academy members would reference for guidance on outcome measures for patients diagnosed with COVID-19. From these documents, we identified and screened 90 applicable outcome measures for inclusion and exclusion criteria (the detailed methods of which are forthcoming). The outcome measures that met these criteria moved forward for possible inclusion as a core outcome measure. We shared the criteria on the APTA website to obtain input and ensure the list was complete. Fifty-two respondents from a variety of clinical practice settings and specialty areas identified seven additional measures that quantified the key constructs. Those seven met the inclusion and exclusion criteria and were added to the discussion for core outcome measures.

From the outcomes that met the criteria for each of the constructs, we identified measures that captured change across the greatest number of functional levels, from dependent to return-to-high-level activities, such as sports. We considered additional factors, which included: the degree to which the measure captured the desired construct, the psychometric properties of the measure, the need for and availability of training and instructions for the measure, availability in different languages, level of difficulty of patient directions, and the time required to complete the measure.

Following construct-specific discussions, we combined the top identified measures from each construct into a draft set of core outcome measures. We reviewed this draft set for overall time to complete, appropriateness across functional levels, and ability to fully capture the desired constructs. We then considered all other measures within each construct as an addition or replacement for each measure within the draft set, repeating this process until we reached consensus that we could make no further improvements.

The final set of core outcome measures is supported by evidence to capture change in cognition, endurance, function, quality of life, and strength across the greatest number of functional levels for individuals diagnosed with COVID-19. The Task Force recommends that all patients diagnosed with COVID-19 with goals in these constructs complete these outcome measures. These recommendations will allow for improved clinical decision-making and monitoring of change across the continuum of care.

Next Steps

1. Develop an algorithm to guide the clinician in the clinical decision process for using the core set and secondary measures across the functional spectrum.
2. Outline processes for selecting the core outcome measures, including methodology, measures removed from consideration, and measures considered but not selected.

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