

400m Walk Test

The 400m walk test can be used to classify the severity of sarcopenia in the context of physical function and mobility.

Materials required:

- 2 traffic cones, placed 18.5m apart
- Tape to mark start line
- Stopwatch
- Tape measure
- (Optional) A chair may be placed at the starting/finishing area as patient may wish to rest after the test

Procedure:

- Set-up test environment: set-up 2 cones in a straight line, 18.5m apart (assuming a 1.5m turning circle making it a 40m circuit up and back).
- Position patient: Patients begin the test at the start line from a standing position. They should walk down the corridor, turn around the cone in a continuous loop, passing the course twice in each lap.
- Explain the test, including safety instructions (included below).
- Collect pre and post-test outcomes measures (heart rate and BORG dyspnoea scale at a minimum).

Instructions to participant:

Prior to the test

“This is not a fitness test. Please walk at a speed as if you were taking a stroll in the park, knowing that you have a longer distance to cover. This circuit, around both cones is 40 meters, we would like you to repeat the course 10 times to complete a 400m distance walk at a steady pace, without overexertion.

I will stand at the side of the circuit. When I say go, start walking at a comfortable pace you can maintain.

You are permitted to stop, and to have a standing rest for up to 60 seconds at a time as necessary, but please resume walking as soon as you are able. If you experience new or increasing chest pain, feel light-headed, a bit confused, unbalanced, become very short of breath or have very sore or very tired legs please stop walking and let me know right away.

I will now measure your heart rate. I will also ask you to rate the difficulty of your breathing. It starts at number 0 where your breathing is causing no difficulty at all and progresses through to number 10 where your breathing difficulty is maximal. (Collect Outcomes).

Are you ready to start? When I say 1, 2, 3, GO begin walking. 1, 2, 3, GO (start timer).”

During the test

“After each lap, the clinician should announce the number of laps completed and the number remaining. For example, you are doing well, you have completed 4 laps and have 6 to go.”

How to measure:

- Record total time and individual lap time.
- If applicable the number, timing, and reasons for rest stops (fatigue, chest pain, feeling faint or dizzy, shortness of breath, or other) should be recorded.
- In the case of noncompletion, gait speed should be obtained from the distance and time walked until drop-out.

Cut Points/Scoring:

low physical performance \geq 6 minutes or non-completion

* Select the most appropriate cut point for the population you are working with

- If test completion takes more than 15 minutes, stop the test at 15 minutes and record as non-completion.
- A 400MWT of greater than 6 minutes is equivalent to a walking speed of 1.1 meters per second or slower and indicates low physical performance. A non-completion also indicates low physical performance.

Frequently asked questions:

Q: Should the patient use their assistive walking device?

A: Whilst the authors of this tip sheet were unaware of any definitive advice regarding the use of walking aids, we would recommend that patients use their normal walking device during test completion to ensure patient safety throughout.

Key references:

Newman AB, et al. Association of long-distance corridor walk performance with mortality, cardiovascular disease, mobility limitation, and disability. JAMA 2006; 295: 2018–26.

Rolland YM, Cesari M, Miller ME, Penninx BW, Atkinson HH, Pahor M. Reliability of the 400-m usual-pace walk test as an assessment of mobility limitation in older adults. J Am Geriatr Soc. 2004 Jun;52(6):972-6.

Lindemann U, Krumpoch S, Becker C, Sieber CC, Freiberger E. The course of gait speed during a 400m walk test of mobility limitations in community-dwelling older adults. Z Gerontol Geriatr. 2021 Dec;54(8):768-774.