INCREMENTAL SHUTTLE WALK TEST

AIM

To able to undertake the incremental shuttle walk test with a service user in a standardised way.

BACKGROUND

The Incremental shuttle walk test is a standardised test to measure exercise capacity in people with COPD and other chronic respiratory disease\(^1\).

It can also be used to measure improvements in exercise capacity following pulmonary rehabilitation\(^2\).

The test requires the service user to walk a set distance (10m), between 2 cones, with the speed dictated by an acoustic signal (‘bleep’). The required walking speed increases each minute with the service user continuing as long as they can (either too breathless or unable to keep pace with the bleep, and the number of laps completed (distanced walked) is measured. The results of this test can be used to prescribe the appropriate level of activity for pulmonary rehabilitation.

Precautions

The test must be standardised, and the CD must be used.

Ensure the cones are set 9 metres apart (to provide a 10m course as the service user walks around them.

Ensure the service user has taken prescribed bronchodilators within an hour of the test.

**STOP the test** if any of the following occur: i) the service user is too breathless to continue, ii) reaches 85% of predicted maximum Heart rate (MHR=210-0.65xage) iii) develops signs of any of these: chest pain/angina, light-headedness, leg cramps or extreme leg muscle fatigue, evolving confusion or lack of coordination, persistent \(\text{SpO}_2<85\%\)

Procedure

1. **Check plan** for any variations to consider (e.g. bronchodilator, need for \(O_2\), need for angina medication etc)

2. **Explain the reason for the test:** e.g. ‘this is a standard test to measure your exercise capacity. It will help us to plan your treatment and will allow us to measure whether you are improving with the treatment’
3. **Position of Service User:** The service user must rest for 15 minutes before undertaking the test. During this time they should be seated. At the start of the test they need to be standing next to one of the 2 cones.

4. **Position of Rehabilitation Assistant:** in to side of service user, so you can clearly observe them and the pulse oximeter reading throughout the test.

5. **Explain how to perform the test:** This should be done whilst the service user is seated. ‘Before you start the test I need to take some observations (record BP, HR, Oxygen saturation and Modified Borg rating) - I will repeat these at the end’.

   You are going to walk around the 2 cones (10m) and aim to get to each cone on or before the beep sounds. I will be counting the number of laps you do. I will stop the test if you are over 0.5m from the cone at the beep OR if you become too breathless to carry on, get chest pain, get severe leg pain or if your oxygen level is too low.

   I will use standard instructions during the test so when each beep sounds I will say “increase your speed now”, and if you are less than 0.5m from the cone as the beep sounds I will say “You’re not going fast enough; try to make up speed this time”. You need to complete the test on two occasions to get an accurate measure, so it will be repeated once you have recovered fully. You can use your normal walking aid, and if you are on prescribed oxygen this will continue during the test.’

6. **Ready ...** follow the standard protocol for the test using only standard instructions (see above). Observe the service user carefully throughout and be prepared to stop the test if indicated. At the end of the test seat the service user and immediately record oxygen saturation, heart rate and Modified Borg rating. Wait 2 minutes and record oxygen saturation and heart rate (to monitor recovery rate). Record the number of shuttles. STOP and seek help if the service user has chest pain.

7. **On completion** seek feedback from service user re how they found the test. Ask them “what do you think stopped you from keeping up with the beeps?” keep the service user in a comfortable position for at least 15 minutes following the to allow recovery. The test should not be repeated until the service user has rested (minimum of 30 minutes between tests)

8. **Document** in the Service User’s (number of shuttles, reason for termination and all observations.

9. **Feedback** clearly to the Registered Practitioner who delegated the task.

**References**


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<th>PT74</th>
<th>Incremental Shuttle Walk Test</th>
<th>TAUGHT</th>
<th>MODELLED</th>
<th>COMPETENT</th>
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1. Read plan, identify exercise/technique and any variations (e.g. need for bronchodilator, O2)
2. Standardised set up of the test (cones 9m apart to give 10m shuttle)
3. Appropriate explanation of the reason for the exercise/technique to Service User
4. Start position of Service User
   - Appropriate recording of BP, HR, SpO₂, Borg rating pre test
5. Position of Rehab Assistant relative to Service User
6. Verbal explanation and demonstration of how to perform the exercise/technique, including when to use and any warnings
7. Supervision of exercise/technique
   i. Standardised prompts given appropriately & accurately
   ii. Appropriate recognition of when to stop and seek advice/help
   iii. Accurate recording of number of shuttles
   iv. Accurate recording of measures on completion
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<td>Completion of exercise/technique – seek feedback from service user</td>
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<td>Documentation</td>
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<td>Feedback to Registered Practitioner</td>
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**Sign and date when achieved**

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