

Operation's Manual: Physical Performance Battery

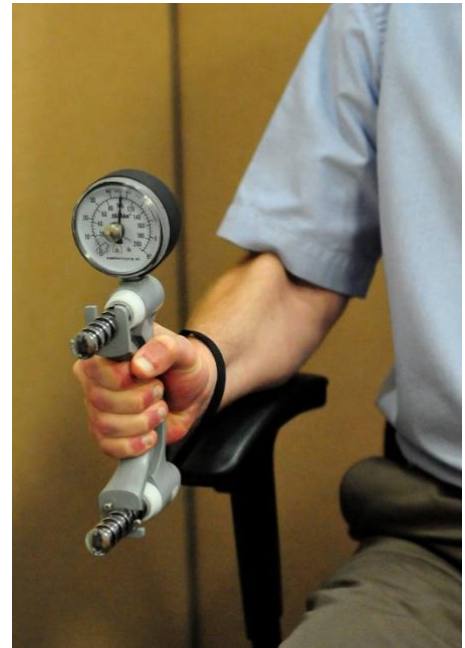
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Measuring Grip strength

Equipment: JAMAR Hydraulic Hand Dynamometer

- Sit the participant comfortably in a standard chair with legs, back support and fixed arms. Use the same chair for every measurement.
- Ask them to rest their forearms on the arms of the chair with their wrist just over the end of the arm of the chair – wrist in a neutral position, thumb facing upwards.
- Demonstrate how to use the Jamar handgrip dynamometer to show that gripping very tightly registers the best score.
- Start with the right hand.
- Position the hand so that the thumb is round one side of the handle and the four fingers are around the other side. The instrument should feel comfortable in the hand. Alter the position of the handle if necessary. One can usually observe if the subject is uncomfortable.
- The observer should rest the base of the dynamometer on the palm of their hand as the subject holds the dynamometer. The aim of this is to support the weight of the dynamometer, but care should be taken not to restrict its movement.
- Encourage the participant to squeeze as long and as tightly as possible or until the needle stops rising. Once the needle stops rising the participant can be instructed to stop squeezing.
- Read grip strength in kilograms from the outside dial and record the result to the nearest 1kg in the CRF.
- Repeat measurement in the left hand.
- Do two further measurements for each hand alternating sides to give three readings in total for each side.
- The best of the six grip strength measurements is used in statistical analyses so encourage the participant to get as high a score as possible.



Chair (sit) to Stand test



Repeated Chair Stands

- ***“Let’s do the last movement test. Do you think it would be safe for you to try to stand up from a chair without using your arms?”***
- ***“The next test measures the strength in your legs.”***
- (Demonstrate and explain the procedure.) ***“First, fold your arms across your chest and sit so that your feet are on the floor; then stand up keeping your arms folded across your chest.”***
- ***“Please stand up keeping your arms folded across your chest.”***
- If participant cannot rise without using arms this is the end of their test. Record result in CRF as “Participant unable to complete 5 chair stands”.
- (Demonstrate and explain the procedure): ***“Please stand up straight as QUICKLY as you can five times, without stopping in between. After standing up each time, sit down and then stand up again. Keep your arms folded across your chest. I’ll be timing you with a stopwatch.”***
- When the participant is properly seated, say: ***“Ready? Stand”*** and begin timing.
- Count out loud as the participant arises each time, up to five times.
- Stop if participant becomes tired or short of breath during repeated chair stands.
- Stop the stopwatch when he/she has straightened up completely for the fifth time.
- Also stop:
 - If participant uses his/her arms
 - After 1 minute, if participant has not completed rises
 - At your discretion, if concerned for participant’s safety
- If the participant stops and appears to be fatigued before completing the five stands, confirm this by asking ***“Can you continue?”***
- If participant says “Yes,” continue timing, if participant says “No,” stop the Chair Stand Test.
- Record in the CRF how long it took the participant to complete the Chair Stand Test or if they were unable to complete 5 chair stands.

Gait speed test (4-metre walk)

“Now I am going to observe how you normally walk. If you use a cane or other walking aid and you feel you need it to walk a short distance, then you may use it.”

A. First Gait Speed Test

- ***“This is our walking course. I want you to walk to the other end of the course at your usual speed, just as if you were walking down the street to go to the shop.”***
- Demonstrate the walk for the participant.
- ***“Walk all the way past the other end of the tape before you stop. I will walk with you. Do you feel this would be safe?”***
- Have the participant stand with both feet touching the starting line.
- ***“When I want you to start, I will say: “Ready, begin.””*** When the participant acknowledges this instruction say: ***“Ready, begin.”***
- Press the start/stop button to start the stopwatch as the participant begins walking.
- Walk behind and to the side of the participant.
- Stop timing when one of the participant’s feet is completely across the end line.



B. Second Gait Speed Test

- ***“Now I want you to repeat the walk. Remember to walk at your usual pace, and go all the way past the other end of the course.”***
 - Have the participant stand with both feet touching the starting line.
 - ***“When I want you to start, I will say: “Ready, begin.””*** When the participant acknowledges this instruction say: ***“Ready, begin.”***
 - Press the start/stop button to start the stopwatch as the participant begins walking.
 - Walk behind and to the side of the participant.
 - Stop timing when one of the participant’s feet is completely across the end line.
- Record the **fastest time** of the two walks in the CRF.