Reference Equations for the Six-Minute Walk Distance in the Healthy Chinese Population Aged 18−59 Years

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Abstract

The six-minute walk test (6MWT) is a safe, simple, inexpensive tool for evaluating the functional exercise capacity of patients with chronic respiratory disease. However, there is a lack of standard reference equations for the six-minute walk distance (6MWD) in the healthy Chinese population aged 18-59 years.

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Guidelines

The six-minute walk test(6MWT) was completed according to the American Thoracic Society (ATS) guidelines.

Before start

The subjects spoke with the researcher to understand the study’s purpose and to complete a questionnaire to ensure that all subjects were healthy.

Protocol

Location

Step 1.

The six-minute walk test (6MWT) should be performed indoors, along a long, flat, straight, enclosed corridor with a hard surface that is seldom traveled. If the weather is comfortable, the test may be performed outdoors. The walking course must be 30 m in length.

Required equipmemt

Step 2.

(1). Countdown timer (or stopwatch)

(2). Mechanical lap counter
(3). Two small cones to mark the turnaround points
(4). A chair that can be easily moved along the walking course
(5). Worksheets on a clipboard
(6). A oximeter
(7). Sphygmomanometer
(8). Telephone

Subject preparation

Step 3.

1. Comfortable clothing should be worn.
2. Appropriate shoes for walking should be worn.
3. A light meal is acceptable before early morning or early afternoon tests.
4. Subjects should not have exercised vigorously within 2 hours of beginning the test.

Measurements

Step 4.

1. Repeat testing should be performed about the same time of day to minimize intraday variability.
2. A “warm-up” period before the test should not be performed.
3. The subject should sit at rest in a chair, located near the starting position, for at least 10 minutes before the test starts. During this time, check for contraindications, measure pulse and blood pressure, and make sure that clothing and shoes are appropriate.

4. Position the subject at the starting line. You should also stand near the starting line during the test. Each subject was asked to walk up and down the corridor as fast as possible in six minutes. As soon as the subject starts to walk, start the timer.

5. The operator needed to prompted the subjects every 60 seconds using standardized encouragement ('you are doing well; you have five minutes left', 'good job; there are four minutes left').

6. Post-test: Record the postwalk Borg dyspnea and ask this: “What, if anything, kept you from walking farther?”

7. If using a pulse oximeter, measure SpO2 and pulse rate from the oximeter and then remove the sensor.
8. Record the number of laps from the counter (or tick marks on the worksheet).
9. Record the additional distance covered (the number of meters in the final partial lap) using the markers on the wall as distance guides. Calculate the total distance walked, rounding to the nearest meter, and record it on the worksheet.
10. Congratulate the subject on good effort and offer a drink of water.

Warnings

If subjects experienced dizziness, leg cramps, chest pain or dyspnoea, they were permitted to stop

and rest.