

Med-Fit Tech Assistant

Medical-Fitness Assessment - Learning Module #7

Aerobic Fitness

Part B

Part B: Treadmill Test

Learning Objective:

- Properly conduct the Treadmill Test
- Calculate the Aerobic Fitness Score

The Treadmill Test for Aerobic Fitness is a 4-minute Run during which the participant tries to cover as much distance as possible by running, jogging, walking on a treadmill at 0 elevation until the time runs out. This test is used as an **alternative** to the Shuttle Test if/when an appropriate outdoor course is not available due to space or weather.

Treadmill Requirements:

- Most commercial grade running treadmills are adequate to conduct this test.
- The treadmill needs to be adjusted to 0 elevation.
- The speed of the treadmill needs to be variable from 0.5 mph to at least 10 mph.
- The distance indicator on the treadmill needs to be calibrated and accurate to 0.01 miles (17.6 yards).
- The treadmill must have an emergency shut-off safety strap.
- The treadmill must be positioned with adequate space and ventilation.

Test Instructions:

- Make sure the treadmill is in good condition and operating properly.
- Demonstrate how to perform this test by operating the treadmill for a couple of minutes.
- Keep the elevation of the treadmill at 0.
- Explain that they want to cover as much distance as possible in 4 minutes.
- Explain that the timer on the treadmill will be covered during the test.
- Explain and demonstrate that they can adjust the speed up or down to run, jog, or walk as they are able.
- Explain that they can stop and rest if needed, but if they do, the clock keeps running.
- Instruct the participant that when they are told their 4 minutes has expired, that they should "note the distance" , but that they should not stop immediately, but rather, they should press the "Cool-Down" button and keep walking for a few minutes as their heart rate recovers.
- Let the participant practice on the treadmill for a couple of minutes as a warm-up and then to "Stop" the treadmill.
- Explain that you will start the clock when the participant "officially" presses the Start button (after their warm-up).

Test Protocol:

- Stand next to the treadmill with the control panel/dashboard in your full view. (Use a stable chair if necessary.)
- Cover the timer on the treadmill panel/dashboard so that the participant will not be able to see the elapsed time.
- Confirm that the participant understands the procedure and ask if he/she is ready to begin.
- After the participant has warmed up, ask him/her to stop the treadmill, and then to restart it when he/she is ready.
- Start a hand-held 4-minute timer when the participant re-starts the treadmill and has taken at least 1 step.

- Observe the participant at all times and check their speed and distance periodically.
- Do not inform the participant how much time is remaining on the clock.
- At the end of the 4 minutes, say out loud: "3, 2, 1, Stop."
- Note the distance on the treadmill panel/dashboard at the moment you say "Stop."
- Watch the distance indicator until it increases by 0.01 miles. If it turns within a few steps, round up to that distance.
- Record the total distance in MILES as displayed by the treadmill panel/dashboard.

Scoring the Test Result:

- Divide the total distance by 0.55 and then multiply that number by 100.
- Round off to the nearest 0.1 decimal point.
- Example: Total Distance = 0.51 miles. $(0.51 / 0.55) \times 100 = 92.7$ (Aerobic Fitness Score)

Aerobic Fitness Score Interpretation:

- Covering 0.55 miles in 4 minutes is slightly faster than an 8-minute mile pace = 7.5 mph for 4 continuous minutes.
- The extra distance requirement (0.05 miles = 88 yards) on the continuous treadmill is to compensate for the stop-and-go course of the Shuttle Test in order to make the scores between the two tests more comparable.
- An Aerobic Fitness Score of 100 (or more) indicates a Very High Fitness Level
- Scores above 100 are admirable, but they do not necessarily confer a health or longevity benefit.
- Since the fitness test is sub-maximal, scores above 120 are not necessarily comparable.
- An Aerobic Fitness Score below 100 indicates "room for improvement," depending on the age of the participant.

Score Interpretation

Score	Fitness Level
100+	Very High
80-99	High
60-79	Average
40-59	Low
20-39	Poor
0-19	Critical

Note: An “average” fitness level among an unfit and unhealthy population that is at increased risk for sedentary-related chronic disease resulting in premature disability and death is not satisfactory.