

Subject: Physical Education

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Paper No. And Title: (401) Test, Measurement and Evaluation in Physical Education

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Test

Cooper 12-minute Run and Walk Test

INTRODUCTION

Cooper's this test is purely a Physical Fitness Test which was designed by Kenneth H. Cooper in 1968 for US Military use. The Cooper 12 minute Run Test is a popular maximal running test of aerobic fitness, in which participants try and cover as much distance as they can in 12 minutes. There are several other variations of running/walking tests, including the Cooper 1.5 mile run test also Cooper's developed a prediction equation for estimating maximal oxygen consumption from the values of distance covered in 12 minutes Run-Walk test for College men and women. This equation has a correlation co-efficient of 0.897 between 12 minutes Run-Walk Test and Maximal oxygen consumption from Treadmill testing.

- In the original form, the point of the test is to run or walk as far as possible within 12 minutes.
- The test is meant to measure the condition of the person taking it and therefore it is supposed to be run at a steady pace instead of sprints and fast running.
- The outcome is based on the distance the test person ran, their age and their sex.
- The results can be correlated with VO2 Max

OBJECTIVE

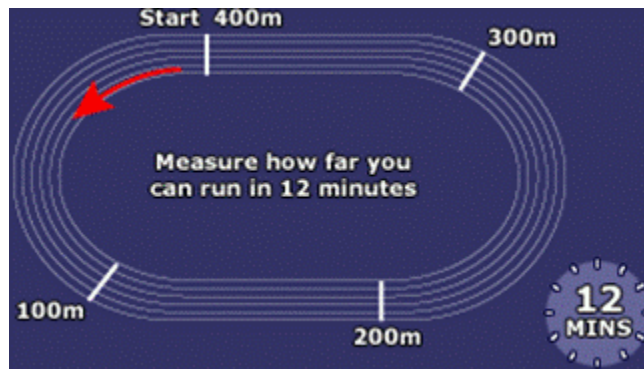
The objective of the test is to measure the maximum distance covered by the individual during the 12 minute period.

PURPOSE

To test aerobic fitness (The ability of the body of use Oxygen to power it while running)

EQUIPMENT REQUIRED

400 metre Running Track divided into minimum in four parts, flags, marker cones, recording sheets, timer or stop watch.



LOCATION

This test is designed to be conducted on a track with clear distance marking. (Some where it is suggested that this test can be conducted on Trade mill but be sure to raise the incline to one degree to simulate outdoor running.)

PROCEDURE

Place the markers or put the flags which should be visible at set interval of 100 metre. Participants start to 12 minute run and walk and the total distance covered should be recorded or noted. The participant should be instructed before the start of test to stop immediately on the same spot at the signal of ending the 12 minutes. Walking is allowed through the participant must be encourage to push themselves as hard as they can covered the maximum distance, participant can be intimated one minute earlier with the special signal. 400 meter track will be

mark by the flags into 4 parts. When subjects will cross one flage to another flege then that will be mark as a completing the 100 meter distance.

WARM UP

To perform the test a short 10 to 15 minutes warm up is better advice before performing any fitness testing.

SCORING

There are Cooper test norm table for general for interpreting the results of this test for adults. There are also several equipments that can be used to estimate VO2 max (in ml/kg/min)) from the distance score (a formula for either Kilometres or Miles)

$$\text{VO2 max} = (35.97 \times \text{miles}) - 11.29$$

$$\text{VO2 max} = (22.35 \times \text{kilometres}) - 11.29$$

The table below also gives general guidelines for interpreting the results of this test for adults. These results are based on a few sources and are only approximate values.

Cooper test (Athletes & Juniors)						
Age	M/F	Very good	Good	Average	Bad	Very bad
13-14	M	2700+ m	2400 - 2700 m	2200 - 2399 m	2100 - 2199 m	2100- m
	F	2000+ m	1900 - 2000 m	1600 - 1899 m	1500 - 1599 m	1500- m
15-16	M	2800+ m	2500 - 2800 m	2300 - 2499 m	2200 - 2299 m	2200- m

	F	2100+ m	2000 - 2100 m	1700 - 1999 m	1600 - 1699 m	1600- m
17-20	M	3000+ m	2700 - 3000 m	2500 - 2699 m	2300 - 2499 m	2300- m
	F	2300+ m	2100 - 2300 m	1800 - 2099 m	1700 - 1799 m	1700- m
20-29	M	2800+ m	2400 - 2800 m	2200 - 2399 m	1600 - 2199 m	1600- m
	F	2700+ m	2200 - 2700 m	1800 - 2199 m	1500 - 1799 m	1500- m
30-39	M	2700+ m	2300 - 2700 m	1900 - 2299 m	1500 - 1899 m	1500- m
	F	2500+ m	2000 - 2500 m	1700 - 1999 m	1400 - 1699 m	1400- m
40-49	M	2500+ m	2100 - 2500 m	1700 - 2099 m	1400 - 1699 m	1400- m
	F	2300+ m	1900 - 2300 m	1500 - 1899 m	1200 - 1499 m	1200- m
50+	M	2400+ m	2000 - 2400 m	1600 - 1999 m	1300 - 1599 m	1300- m
	F	2200+ m	1700 - 2200 m	1400 - 1699 m	1100 - 1399 m	1100- m

Cooper test (Experienced athletes)

Gender	Very good	Good	Average	Bad	Very bad
Male	3700+ m	3400 - 3700 m	3100 - 3399 m	2800 - 3099 m	2800- m
Female	3000+ m	2700 - 3000 m	2400 - 2699 m	2100 - 2399 m	2100- m

VALIDITY

Coopers (1968) reported a correlation of 0.90 between direct VO2 max running measures meaning this test has reasonably high validity.

RELIABILITY

The reliability of this test would depend on the people being tested in term of the amount of practice or experience they have had completing the test, their pacing strategies and their motivation level. There should be good reliability if these issues are addressed.

ADVANTAGES

The large group can be tested at a time, and it is very cheap and simple test to perform.

DISADVANTAGES

Practice and passing is required, motivation can effects the performance, large group participation need more official and laps scorers.

COMMENTS

The world record for 5000 m. is held by Kenenisa Bekele in 12:37.35. Based on that time, he would complete 4752 m. or 11.88 laps in 12 min. The validity of Cooper's test on track and Treadmill is may not be true. There are many variations of run and walk tests.

TARGET POPULATION

These test can be modified to be suitable for most populations. For those who are unfit or unable to run, there are similar walking test that can be performed.