The Rockport One Mile Walking Field Test Equation

Overview: The Rockport Walking Test is a field test which involves the endurance walking of 1 mile over a level terrain. It provides a valid sub-maximum assessment for estimating maximum oxygen uptake. It was developed at the Department of Exercise Science of the University of Massachusetts at Amherst.

Population:

• adults from age 30 to 69 years

• both males and females

Test Conditions: one mile track walks performed as fast as possible

Generalized Equation

maximal oxygen uptake in mL per kg per min = 132.853 - (0.0769 * (body weight in pounds)) - (0.3877 * (age in years)) + (6.315 * (gender score)) - (3.2649 * (time in minutes to walk mile)) - (0.1565 * (heart rate at end of walk))

where:

• gender score = 0 if female 1 if male

• heart rate at end of walk is the heart rate in beats per minute at the end of the last one-quarter mile for the first track walk

• time to walk mile is recorded in hundredth of a minute

• r value 0.88 SEE 5.0

Additional Equations:

Estimating Oxygen Uptake in mL per kg per min

Parameter	Male	Female
coefficient	154.899	116.579
weight in pounds	-0.0947	-0.0585
age in years	-0.3709	-0.3885
gender score	NA	NA
time to walk mile in minutes	-3.9744	-2.7961
heart rate at end of walk	-0.1847	-0.1109

(from Table 4 page 256 Kline 1987)

	Male	Female
r value	0.85	0.86
SEE	5.3	4.5

Additional Equations:

Estimating Oxygen Uptake in L per min

Parameter	Generalized	Male	Female
coefficient	6.9652	9.0093	5.5597
weight in pounds	0.0091	0.0106	0.0077
age in years	-0.0257	-0.0277	-0.0236
gender score	0.5955	NA	NA
time to walk mile in minutes	-0.224	-0.3115	-0.1713
heart rate at end of walk	-0.0115	-0.0148	-0.0067

(from Table 4 page 256 Kline 1987)

	Generalized	Male	Female
r value	0.93	0.86	0.86
SEE	0.325	0.358	0.249

References:

American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription Fifth Edition. Williams & Wilkins. 1995. Table D-3. page 284.

Kline GM Porcari JP et al. Estimation of VO2max from a one-mile track walk gender age and body weight. Med Sci Sports Exerc. 1987; 19: 253-259.