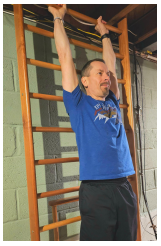
FITNESS ASSESSMENTS

Element of fitness	Assessment	SAR Rationale	Test1	Test2
Mobility/Flexibility	Inchworm test: Distance in inches, from toes to wrists. 	-Efficiency of movement -Injury prevention		
Stability/Balance	1-leg reach and hover forward/back. Measured in inches from toes to toes.  	-Dynamic balance -Up/downhill performance	Forward L R Back L R	Forward L R Back L R
Aerobic Fitness = VO2 max	Option 1: Treadmill incline walk (*1) Option 2: 12-minute run flat/track (*2) See instructions below.	-Health and longevity -Energy and endurance -Cardio performance -Cognitive performance -Stress tolerance		
Lower body muscular endurance	Squat to box/chair (knees at 90°) Number of repetitions in 60 sec 	-Hiking endurance -Climbing endurance -Squatting tasks		
Upper body strength	Push-up (regular or modified) Max number of reps (elbow< 90°) 	-Load carry performance (backback, litter) -Upper body tasks		
Upper body strength **Grip strength**	Deadhang. Max time of hanging from a bar/branch etc. in seconds 	-Load carry performance (litter carry) -Overhead tasks		

***1**

VO2 max test - Treadmill walk

Walk on the treadmill increasing the incline/speed each minute until unable to continue. Record the final time, the speed and the grade. Calculate your VO2 max with the equation.

Walking max exertion: VO_2peak (mL x kg^{-1})= 0.1 S + 1.8SG + 3.5
(see the example below for the calculation)

Running equation: VO_2peak = 0.2S + 0.9SG + 3.5

S= speed in meters per min
G= percent grade in decimal form

Time (min)	SPEED (mph)	GRADE	TIME (min)	Test1	Test2
0	1.0	0%	1		
1	1.5	0%	1		
2	2.0	0%	1		
3	2.5	0%	1		
4	2.5	2%	1		
5	3.0	2%	1		
6	3.3	3%	1		
7	3.4	4%	1		
8	3.5	5%	1		
9	3.6	6%	1		
10	3.7	7%	1		
11	3.8	8%	1		
12	3.9	9%	1		
13	4.0	10%	1		
14	4.1	11%	1		
15	4.2	12%	1		
16	4.3	13%	1		
17	4.4	14%	1		
18	4.5	15%	1		
19	4.6	16%	1		
20	4.7	17%	1		
Cool down		0%			

Example (Tommi's numbers):

Conversions:
Speed= meters/min
Grade= decimal form

S= 4.4 mph = 118.019 meter/min
G= 14% = 0.14 (decimal form)

Walking max exertion:
VO_2peak (mL x kg^{-1}) = 0.1 S + 1.8SG + 3.5
VO_2peak (mL x kg^{-1}) = 0.1 (118.019) + 1.8 (.14)(118.019)
VO_2peak (mL x kg^{-1}) = 45.04

***2**
12-minute run (Cooper's test)

Instructions link
https://www.verywellfit.com/fitness-test-for-endurance-12-minute-run-3120264#:~:text=Calculate%20Your%2012%2DMinute%20Run,x%20miles)%20%2D%2011.291%EF%BB%BF

Online calculator link
https://exrx.net/Calculators/MinuteRun