



Wellness Fitness Initiative (WFI) Treadmill Evaluation & Protocol



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Wellness Fitness Initiative (WFI) Treadmill Evaluation

Cardiorespiratory fitness is essential for Emergency Responders. The physiologic burden of wearing bulky protective clothing, breathing through a self-contained breathing apparatus and performing physically demanding work at the incident scene places an enormous strain on the body. Firefighter work environments are also known to contain toxic chemicals that may also contribute to the development of heart disease over time (Kristensen, 1989).

The IAFF/IAFC Fire Service Joint Labor/Management Wellness-Fitness Initiative recommends cardiopulmonary testing for Emergency Responders. Such testing needs to be conducted as a part of pre-employment testing and annually thereafter.

The WFI Treadmill Evaluation is a VO_2 max test to evaluate Firefighter applicant aerobic capacity under the direct supervision of a certified Exercise Physiologist. All test results are reviewed by an Occupational Physician. The minimum recruit time is 12 minutes and 30 seconds. The minimum time standard is based on the average VO_2 max at 12:30, which is 45 ml/kg/min. An aerobic capacity of 45 ml/kg/min is the recommended minimum cardiorespiratory fitness standard for Firefighters (Gledhill and Jamnik, 1992).

The WFI Treadmill Evaluation is completed using direct gas analysis, which means you will be wearing a Face Mask that will collect the expired air from your nose and mouth. You will wear the Face Mask while you run at increasing speeds and grades on the Treadmill. The assessment will continue until the participant can no longer continue or the subject exhibits the medical criteria for early termination of the test. The goal is to meet or exceed 12 minutes and 30 seconds. It is important that you train to be comfortable obtaining this level as it is the minimum. Please note that the additional information collected during this evaluation is a part of your baseline medical. As a result, it is important that you give us your absolute best effort during all testing.

Use caution when beginning an exercise program. It is important you have an awareness of your current health status and ability to partake in physical activity. Take a moment to complete the PAR-Q Physical Activity Readiness Questionnaire before beginning any exercise programs or aerobic fitness evaluations. Consult your Physician if you have questions about becoming more active.

WFI Treadmill Evaluation Protocol

Time (min:sec)	Speed (mph)	Grade (%)
0:00 – 1:00	3.0	0
1:01 – 2:00	3.0	0
2:01 – 3:00	3.0	0
3:01 – 4:00	4.5	0
4:01 – 5:00	4.5	2
5:01 – 6:00	5.0	2
6:01 – 7:00	5.0	4
7:01 – 8:00	5.5	4
8:01 – 9:00	5.5	6
9:01 – 10:00	6.0	6
10:01 – 11:00	6.0	8
11:01 – 12:00	6.5	8
12:01 – 13:00	6.5	10
13:01 – 14:00	7.0	10
14:01 – 15:00	7.0	12
15:01 – 16:00	7.5	12
16:01 – 17:00	7.5	14
17:01 – 18:00	8.0	14
18:01 – 19:00	8.0	16
19:01 – 20:00	8.5	16
Recovery Phase		
00:00 – 1:00	3.0	0
1:01 – 2:00	3.0	0
2:01 – 3:00	3.0	0

WFI Treadmill Evaluation Training Tips:

- Practice the above protocol on a Treadmill.
- Train to exceed the 12:30 minimum time standard. Confidence that you can exceed the minimum standard will help ease your pretest anxiety.
- Do not become distracted by wearing a Face Mask during the test. The Face Mask does not restrict breathing.
- Focus on increasing your aerobic fitness through proper training and practicing the protocol.