

Ontario Fire Administration Inc.
Firefighter Candidate Testing
Physician Information Booklet



Dear Physician:

Your patient is engaged in pre-employment testing with Ontario Fire Administration Inc. as a firefighter candidate within the province of Ontario. You are receiving this information because your patient answered “YES” to one or more of the pre-testing medical questions listed on the “Firefighter Candidate Testing Medical Questionnaire,” or because your patient has indicated a change in their medical status since their last “Medical Clearance Form.” Your patient requires completion of this “Medical Clearance Form” prior to participating in components of the firefighter candidate testing. The candidate has been advised of this requirement and informed that they cannot continue to further stages of testing without medical authorization.

To provide maximum clarity about our physical testing procedures, we have created this Physician Information Booklet. We hope you find this information informative and helpful as you assess your patient for fitness to participate in our testing. Should you have any questions, concerns, or comments you are welcome to contact us.

Thank you for your assistance.

Ontario Fire Administration Inc.

Background

Ontario firefighters respond to fires, medical emergencies, are engaged in public awareness and public education, complete training activities, conduct post-fire salvage and cleanup, conduct pre-planning activities and equipment/station maintenance.

A firefighter's role is extremely varied which involves working in a vast array of situations, including hot and humid environments, dark and confined spaces, oxygen deficient atmospheres, prolonged periods of physical activity and extended work hours. The majority of their work occurs at night when their body is telling them to rest. The day-to-day work of a firefighter is also extremely varied and calls upon strength, endurance and flexibility at different incidents.

Ontario Fire Administration Inc. provides pre-employment physical screening for career and volunteer firefighters in the province of Ontario.

Applicants must demonstrate a level of physical fitness required of entry-level firefighters. Physical fitness is an integral component of firefighting. A commitment to a life-long fitness regime is essential to safely performing firefighter duties. To prepare for the intense physical demands of recruit training and for a career as a firefighter, applicants should already be following and maintaining a total body program specific to the job that focuses on flexibility, cardiopulmonary endurance, muscular strength and power, muscular endurance and healthy body composition.

Firefighter Candidate Testing - Medical Questionnaire

The Firefighter Candidate Testing – “Medical Questionnaire” is used to pre-screen a candidate for medical conditions that may require further information to be provided to the test facility before the candidate can take part in our assessments. Candidates are required to consult a physician if they answered “YES” to any questions on the questionnaire or if at any time they note a change in their medical status. Such candidates will not be permitted to participate in the candidate testing assessments without medical authorization. A candidate must produce a “Medical Clearance Form,” completed by their physician, at their testing appointment before being allowed to continue with testing.

Candidate Freedom of Consent

The candidate's participation in each physical fitness test is strictly voluntary. He/she is free to stop the testing at any point during the assessment. However, a certificate for the testing will not be issued unless the evaluation for that stage is successfully completed in full.

The candidate will be provided with sufficient information regarding the potential risks and discomforts associated with the test procedures. The candidate will be given an opportunity to ask questions.

Expected benefits from testing

These tests will enable us to assess a candidate’s physical working capacity and appraise their physical fitness to be a firefighter. Testing results will be used, in part, to qualify for an Ontario Fire Administration Inc. certificate.

Stage 2 Testing – “The Clinical Assessment”

Clinical assessment of cardio-respiratory capacity, body composition and other physical fitness components requires a candidate to voluntarily consent to the following tests as part of the OFAI Candidate Testing Service (CTS) Clinical Evaluation:

- Resting blood pressure and heart rate
- Mass and height determination
- Trunk flexibility
- Muscular endurance (Sit-up test)
- Aerobic capacity testing (graded exercise stress test)

Explanation of the Assessment

Baseline measurements will be determined using an automatic blood pressure device, followed by anthropometric measurements (height and mass).

Flexibility will be evaluated using a sit and reach test, which measures the range of motion of a candidate’s joints.

Muscular endurance will be assessed using a sit-up test. During this test, the candidate will perform sit-ups for a timed minute.

Cardiorespiratory fitness (aerobic capacity) will be evaluated using a motor-driven treadmill and direct gas analysis. The workload will escalate through increases in both treadmill speed and elevation. The protocol will continue until exhaustion or until other symptoms dictate that the test is terminated. The candidate may stop the test at any time due to fatigue or discomfort.

Ontario Fire Administration Inc. utilizes the Modified IAFF WFI Treadmill Protocol described below:

	Speed	Grade	Time
Stage 1	3.0 mph	0 %	0:01 – 1:00 minutes
	3.0 mph	0 %	1:01 – 2:00 minutes
Stage 2	3.0 mph	0 %	2:01 – 3:00 minutes
	4.5 mph	0 %	3:01 – 4:00 minutes
Stage 3	4.5 mph	2 %	4:01 – 5:00 minutes
Stage 4	5.0 mph	2 %	5:01 – 6:00 minutes
Stage 5	5.0 mph	4 %	6:01 – 7:00 minutes
Stage 6	5.5 mph	4 %	7:01 – 8:00 minutes
Stage 7	5.5 mph	6 %	8:01 – 9:00 minutes
Stage 8	6.0 mph	6 %	9:01 – 10:00 minutes
Stage 9	6.0 mph	8 %	10:01 – 11:00 minutes
Stage 10	6.5 mph	8 %	11:01 – 12:00 minutes
Stage 11	6.5 mph	10 %	12:01 – 13:00 minutes
Stage 12	7.0 mph	10 %	13:01 – 14:00 minutes
Stage 13	7.0 mph	12 %	14:01 – 15:00 minutes
Stage 14	7.5 mph	12 %	15:01 – 16:00 minutes
Stage 15	7.5 mph	14 %	16:01 – 17:00 minutes
Stage 16	8.0 mph	14 %	17:01 – 18:00 minutes
Stage 17 → speed increase 0.5mph each additional minute, maintain grade 14% until test termination			
Recovery Phase			
Recovery	3.0 mph	0 %	0:00 – 1:00 minutes
Recovery	3.0 mph	0 %	1:00 – 2:00 minutes
Recovery	3.0 mph	0 %	2:00 – 3:00 minutes

The candidate will walk on a flat motorized treadmill at a speed of 3 mph, 0% grade for three-minute steady state. After three minutes, the speed will be increased to 4.5 mph for an additional minute before a series of one-minute intervals, alternating grade (2%) and speed (0.5 mph). The alternating speed and grade increases will continue each minute until the candidate can no longer continue due to volitional fatigue. Following testing, a three min cool down will be performed, as outlined.

Treadmill protocol has been adapted from the IAFF WFI fitness assessment protocol. International Association of Fire Fighters. The Fire Service Joint Labor Management Wellness-Fitness Initiative. Washington, D.C.: International Association of Fire Fighters; 1999 (revised 2008).

Risks and Discomforts

During the graded exercise test, the candidate may experience: an increase in pulse; increased breathing frequency; abnormal blood pressure responses; fainting; dysrhythmias; and/or, the possibility of a cardiac ischemia. Emergency equipment and trained personnel will be available on site if necessary.

There is a possibility of mild back discomfort and the possibility of muscle strain/sprain when performing the trunk flexibility testing. In addition, candidates may experience muscle soreness 24 to 48 hours after the testing session. This soreness can be a result of the flexibility and/or treadmill protocols. Appropriate stretching instructions can be provided by on-site professionals to reduce and relieve soreness.

During the graded exercise test, the following may occur:

- Slippage of the heart rate monitor
- Minor air leakage from oxygen mask
- Disconnection of mask line

These issues do not impact final results and trained personnel will rectify these issues with little or no interruption during the candidate's exercise test.

Stage Three: Part One-Candidate Physical Ability Test (CPAT)

The job of a firefighter is one of the most physically demanding jobs in North America. The Candidate Physical Ability Test (CPAT) consists of eight critical physical tasks that simulate actual job duties on the fire ground. This test is demanding and requires candidates to be physically fit to be successful.

This CPAT is a sequence of events that requires the candidate to progress along a predetermined path, from event to event, in a continuous manner. In these events, the candidate wears a 50-pound (22.68 kg) vest to simulate the weight of self-contained breathing apparatus (SCBA) and firefighter protective clothing. An additional 25 pounds (11.34 kg), using two 12.5-pound (5.67 kg) weights that simulate a high-rise pack (hose bundle), is added for the stair climb event.

All props were designed to obtain the necessary information regarding the candidate's physical ability. The tools and equipment were chosen to provide the highest level of consistency, safety and validity in measuring the candidate's physical abilities. The events are placed in a sequence that best simulates their use in a fire scene while allowing an 85-foot (25.91-m) walk between events.

1. **Stair Climb:** During this event, the candidate is required to wear two 12.5-pound (5.67-kg) weights on their shoulders to simulate the weight of a high-rise pack (hose bundle). The candidate is required to walk on a Step Mill at a set stepping rate of 60 steps per minute [Level 4] for three minutes. The two 12.5-pound (5.67-kg) weights are then removed.

2. **Hose Drag:** During this event, the candidate follows a pre-determined course to lay 200 feet (60 m) of 1 3/4-inch hose.
3. **Equipment Carry:** During this event, the candidate carries two saws while walking 150 feet.
4. **Ladder Raise and Extension:** During this event, the candidate raises and extends a 24-foot (7.32-m) aluminum extension ladder according to pre-determined criteria.
5. **Forcible Entry:** During this event, the candidate uses a 10-pound (4.54-kg) sledgehammer to simulate forcible entry.
6. **Search:** During this event, a candidate crawls on hands and knees through a tunnel maze that is approximately three feet (91.44 cm) high, four feet (121.92 cm) wide and 64 feet (19.51m) in length with two 90 degree turns. At a number of locations in the tunnel, the candidate navigates around, over and under obstacles. In addition, at two locations, the candidate crawls through a narrowed space where the dimensions of the tunnel are reduced.
7. **Rescue:** During this event, the candidate drags a 165-pound (74.84-kg) mannequin for a total of 70 feet.
8. **Ceiling Breach and Pull:** During this event, the candidate fully pushes up on a 60-pound hinged door in the ceiling with the pike pole three times. The candidate then hooks the pike pole to the 80-pound ceiling device and pulls the pole down five times. Each set consists of three pushes and five pulls. The candidate repeats the set four times.

All evolutions can be view by accessing individual videos on our website at www.ofai.ca/ofai-candidate-testing-services/candidate-physical-ability-test-cpat

Stage Three: Part Two, Firefighter Technical Skills

The Firefighter Technical Skills assessment is based on bona fide occupational requirements, with many of the skills coming from NFPA 1001 Level I and Level II, and material found in IFSTA's Essentials of Firefighting and Fire Department Operations (Version 6). Each candidate is given specific instructions and must perform each evolution as per evaluator instructions, and in the safest manner possible.

Candidates are required to perform the evolutions dressed in personal protective equipment (PPE) and will be required to partake in evolutions using a self-contained breathing apparatus (SCBA).

Each evolution has a time limit of 10 minutes. Candidates are asked before each evolution if they understand the directions and if they would like to voluntary withdraw.

The candidates are required to perform the following skills:

Skill 1: 10 Metre Ladder Climb

Candidates must prepare an axe for lifting using an appropriate rope and clove hitch knot with two half hitches. They must then tie two additional knots—a bowline around a ladder prop and a figure 8 on a bight on a separate rope. Candidates climb a 10 metre ladder until they encounter a rung with tape, and apply a proper leg lock. They must take both hands off the ladder, reach around and touch each of their toes. They then proceed and dismount on a third floor balcony. They are required to raise the axe up to the balcony, and then lower it back to the ground. They then climb back onto the ladder and descend.

Skill 2: Self Contained Breathing Apparatus (SCBA) Proficiency Test

Candidates must be dressed properly in full Personal Protective Equipment (PPE) and a SCBA with a blacked out face mask for this skill test. Candidates enter a maze structure (crawling position) and perform a proper search technique through the entire maze, passing obstacle as they are encountered. Candidates must exit at point of entry, once the proper search has been completed

Skill 3: Roof Ventilation

Each candidate must be dressed properly in full PPE and SCBA for this skill test. Candidates position a roof ladder on our roof simulator (approximately five feet from the ground) and cut a 22" x 22" (55cm x 55cm) vent hole, with a pick head axe. Candidates are then required to simulate opening the ceiling below the roof using a pike pole to make contact with the base of the structure, three times.

Skill 4: 7 Metre Ladder Roof Ladder Raise

Using proper lifting techniques, candidates pick up a 7m ladder and perform a one firefighter raise – either a beam or flat raise. Once the 7m ladder is correctly in place, and when advised it is safe to proceed, candidates climb the 7m ladder and proceed to deploy the roof ladder correctly, and safely. Once the evolution is complete, candidates climb down and return the roof ladder to the ground.

Skill 5: Fine Motor Skills Hose Assembly

Candidates establish a water supply from a hydrant with a hose to a pump panel. Once the connections have been successfully established, candidates proceed to a charged water line and direct water through a hole on a target.

Skill 6: Medical Skills Scenario

Candidates must have advanced first aid training, CPR training and the competence and training required to insert a properly sized oropharyngeal airway, operate a bag valve mask, apply an adult non-re-breather mask and describe the oxygen flow rate or concentration required. In this skill, candidates perform an assessment and verbalize treatment for all conditions and injuries discovered on a simulated patient.

Additional details on our Firefighter Technical skills assessment can be found here:

<http://www.ofai.ca/ofai-candidate-testing-services/firefighter-technical-skills-assessment>