

**Ontario Fire Administration Inc.**  
**Firefighter Candidate Testing**  
**2020 Physician Information Booklet**

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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.

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### **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

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physical fitness to be a firefighter. Testing results will be used, in part, to qualify for an Ontario Fire Administration Inc. certificate.

### Stage Two: Encapsulated Treadmill Test

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

1. Resting blood pressure and heart rate
2. Mass and Height determination
3. Aerobic Endurance Assessment-Encapsulated Treadmill Protocol

### Explanation of the Tests

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

The aerobic endurance assessment is designed to evaluate the physical work capacities of healthy, physically active individuals. The encapsulated treadmill protocol is a progressive, incremental exercise test to exhaustion. Each test requires a maximal effort. There are four phases to this assessment:

- Phase One (**mandatory**)
- Phase Two (**mandatory**)
- Phase Three (**voluntary\***)
- Phase Four (**mandatory**)

*\*while completing Phase Three is NOT mandatory you are strongly encouraged to attempt this phase until you can no longer continue in order to exhibit a maximal physical effort)*

In order to pass the treadmill test, the candidate **must** complete the five minute Phase One, the eight minute Phase Two and the five minute Phase Four (for a total of at least 18 minutes).

This assessment is completed while wearing firefighting personal protective equipment (PPE) that weighs approximately 23 kg (51 lb). The candidate is permitted to walk, jog and/or shuffle as required during this protocol.

During Phase One, the treadmill is set to a speed of 3.5mph and there are gradual increases in grade over a five minute period. This is immediately followed by Phase Two, an eight minute period of constant work at 3.5mph and a 10% grade.

Once Phase Two is complete, the candidate immediately progresses to Phase Three. During this phase the treadmill speed remains at 3.5mph but the grade increases 1% every minute to a maximum of 15%. Once a 15% grade is reached, the speed will then increase by 0.5 mph each minute while the grade remains at 15% until the candidate can no longer continue.

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Once the candidate indicates they can no longer continue, the candidate must complete Phase Four, which is five minutes on a flat treadmill at a slow speed.

This 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.

### Risks and Discomforts

During the encapsulated treadmill test, the candidate may experience: an increase in heart rate; increased breathing frequency; abnormal blood pressure responses; fainting; irregularities in heart rate; and/or, the possibility of a heart attack. Every effort will be made to minimize the risk of occurrence (i.e., completing the OFAI Medical Questionnaire). Emergency equipment and trained personnel will be available on site if necessary.

The candidate may experience muscle soreness 24 to 48 hours after the testing session. This soreness can be a result of the treadmill protocol. If muscle soreness occurs, information on appropriate stretching exercises to relieve any soreness can be provided.

During the encapsulated treadmill 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 the final result and trained personnel will rectify these issues with little or no interruption to the exercise test. In the event the evaluator must stop the treadmill test due to these issues, the evaluator will obtain the candidate's consent before restarting the test.

## Stage Three-Firefighter Physical Aptitude Job-Related Tests (FPAT)

### Explanation of the Tests

The Firefighter Physical Aptitude Job-Related Tests are comprised of six assessments that evaluate an individual's ability to complete the essential physical demands of structural firefighting. The tests are performed sequentially, and timed independently. In order to pass, all six tests must be completed safely, correctly, and in the prescribed amount of time.

The tests are performed in full personal protective equipment (PPE) that weighs approximately 23kg (51lb), depending on size. This ensemble includes: helmet, flash-hood, leather work gloves, coveralls, pants, boots, jacket, a safety harness and a self-contained breathing apparatus (SCBA). Candidates must carry the SCBA, but are not on air.

Prior to commencing the assessment, candidates will participate in a mandatory familiarization session which provides you with an opportunity to practice each of the six tests. This takes approximately 30 minutes and serves two purposes. First, to familiarize candidates with the testing procedures, and

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second, the practice provides a suitable warm-up for the tests that follow.

The following is a list of the six tests. Each of the six FPAT tests is followed by a recovery period of exactly three minutes.

#### **1. Equipment Carry/Vehicle Extrication**

The test time begins when candidates move to pick up the small (20 kg or 44 lb) tool. Candidates will lift and carry the small and then the large (36 kg or 80 lb) tools from the starting point and place them in designated places on the floor 15 m (50') away.

Next, candidates will pick up the smaller (20 kg) tool, carry it 7.6 m (25') and set it down in front of a vehicle door mock-up. The smaller tool must be held in a level position at right angles to the door mock-up with the "jaws" in firm contact with each of three flat metal discs that are similarly oriented to the three "pins" that must be broken to remove a car door. The tool must be held in the correct position for 30 s on each disc. The tool is set down between each hold, and candidates must stand erect before lifting the tool and moving on to the next point of contact.

After this sequence is completed, the candidate returns both tools to the starting point. The test time stops when the candidate places both feet securely on a rubber mat. The total walking distance is 105 m (345').

This test evaluates the muscular strength and endurance required to lift, carry and use heavy tools in rescue situations. In order to pass the test, the candidate must complete all aspects of the simulation safely and with correct form in 3 minutes and 45 seconds or less.

#### **2. Charged Hose Advance**

From a standing position facing forward, the candidate will bend and pick up a nozzle connected to 3 lengths of charged 44 mm (1.75") hose. The test time starts when the candidate moves to pick up the hose.

Holding the nozzle and hose securely with two hands over the preferred shoulder, the candidate will advance the hose to the finish line. The hose is advanced a distance of 30 m (100') while walking as quickly as possible (running is not permitted).

The test time stops when the candidate places both feet securely on a rubber mat.

This test assesses lower body strength and power for pulling and dragging. The test must be completed correctly and safely in 27 seconds or less.

#### **3. Weighted Sled Pull**

Starting from an erect position facing forward, straddling the rope on the floor, the candidate will bend and pick up a length of static 16 mm (5/8") nylon rope attached to a weighted sled. The test time begins when the candidate begins to reach for the rope.

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Keeping feet securely in place, the candidate will use the rope to pull the sled over the floor a distance of 15.24 m (50'). The candidate will then walk 15.24 m (50') and repeat the pull, walk back 15.24 m (50') and repeat the pull for the third and final time.

The test time stops when the sled has completely crossed the line for the third time.

This test assesses upper body strength, power, and endurance for pulling and hoisting. The test must be completed correctly and safely in 1 minute and 50 seconds or less.

#### **4. Forcible Entry Simulation**

Starting from a standing position, the candidate will pick up the 4.5 kg (10 lb) sledge hammer and use it to strike the mechanically braked target surface of the forcible entry apparatus.

The test clock starts as soon as the candidate reaches for the hammer which is standing on the floor directly in front of the apparatus, and stops as soon as a buzzer goes off, indicating the end of the test.

This test assesses muscle strength and power for striking. The test must be completed correctly and safely in 19 seconds or less.

#### **5. Victim Rescue**

Starting from an erect position, the candidate will bend to grasp a rescue harness and drag a mannequin weighing approximately 83 kg (183 lb) through a simple serpentine obstacle course. The candidate will turn around a traffic cone at 15 m and return to the start for a total distance of 30 m (100').

The test time starts when the candidate moves to pick up the mannequin and ends when the mannequin's feet are completely across the finish line. No part of the candidate's body or the mannequin may touch the traffic cones during the test.

This test assesses upper and lower body muscle strength and endurance for pulling and dragging. The test must be completed correctly and safely in 57 seconds or less.

#### **6. Ladder Climb**

Starting from a standing position facing the ladder, the candidate will climb 10 rungs (3.45 m) up and down a 7.2 m (24') ladder. This is repeated five times as quickly as possible.

The candidate will climb and place two feet on the 10th rung (weight-bearing step is required), reverse direction and climb down until both feet are again on the floor to complete the repetition.

The test time starts when the candidate moves to start climbing and ends when both feet are on the floor after the 5th repetition. The candidate must maintain three points of contact on the ladder at all times, and must climb the ladder rung by rung, without missing any of the rungs.

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This test evaluates the leg strength and endurance required for climbing under load. The test must be completed correctly and safely in 1 minute and 37 seconds or less.

#### **Risks and Discomforts**

During the Firefighter Physical Aptitude Job-Related Tests, the candidate may experience: an increase in heart rate; increased breathing frequency; abnormal blood pressure responses; fainting; irregularities in heart rate; and/or, the possibility of a heart attack. Every effort will be made to minimize the risk of occurrence (i.e., completing the OFAI Medical Questionnaire). Emergency equipment and trained personnel are available on site if necessary.

There is a possibility of mild back discomfort and the possibility of muscle strain/sprain when performing the Firefighter Physical Aptitude Job-Related Tests. In addition, candidates may experience muscle soreness 24 to 48 hours after the testing session. If muscle soreness occurs, information on appropriate stretching exercises to relieve any soreness can be provided.

During the Firefighter Physical Aptitude Job-Related Tests, you will be required to wear a fall arrest device when climbing the ladder. The purpose of this device is for your personal safety and the safety of the evaluation staff.

#### **Stage Three: Firefighter Technical Skills**

The Firefighter Technical Skills assessment is based on 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 voluntarily 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 onto a third floor balcony. They must 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 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>