

**BUREAU OF HEALTH SERVICES
GUIDANCE FOR FIREFIGHTER CANDIDATES CONCERNING
MEDICAL ASSESSMENT**

I. INTRODUCTION

The job of a Firefighter is physically demanding. For this reason, the Bureau of Health Services (BHS) conducts a physical and mental health assessment, sometimes also referred to as a “medical exam” or “medical assessment” of each candidate to determine whether the candidate can safely fulfill the requirements of the job.

This Guidance is intended to provide you with important information about what to expect on the day of the assessment, and also to provide some tips on how to increase your likelihood of a successful result.

You can increase your chances of passing the medical exam by preparing for it! Weight management, fitness training, and an overall healthy lifestyle are all likely to increase your chances of passing the medical assessment in advance of your medical assessment date.

Your cooperation during the BHS medical assessment is required. If you require a reasonable accommodation due to a disability or because of your religion in order to complete the BHS medical assessment, please contact the FDNY EEO Office at 718-999-1446, 1447 or 1448.

II. WHERE DOES THE TEST TAKE PLACE?

Most components of the FDNY medical assessment will take place at BHS, located at FDNY Headquarters, 9 MetroTech Center, Second Floor, Brooklyn, NY 11201. Should any component of the medical assessment not take place at BHS, you will be notified of the location in writing.

III. WHAT SHOULD I EXPECT AT THE MEDICAL EXAM?

You will be required to arrive at BHS at 6:45 AM. Although the length of time will differ from candidate to candidate, you should expect to be at BHS until about 4:00 PM. Please carefully read the letter scheduling your appointment with BHS for other instructions.

During the BHS medical assessment, a BHS representative will provide you with a set of forms¹ and describe them to you. It is important that you provide complete and accurate information on all forms. Your answers to the questions on the forms will be used by BHS during its medical assessment and will assist BHS in determining whether you are medically fit for appointment as a Firefighter. Upon arrival you will be asked to fill out the BHS medical forms. Then you will proceed through a series of “stations” that make up the medical exam.

¹ You can look at the forms and get an idea of the information you will need to supply at: <http://www1.nyc.gov/site/fdny/jobs/career-paths/candidate-resources-fdny-medical-assessment.page>. Please note that with the exception of Form 1A, which candidates receive when they are scheduled for a BHS medical assessment, these forms must be completed during your visit to BHS.

Other components of the medical assessment include a psychological evaluation, and a timed run. These occur on a separate days from your initial visit to BHS. All of these are described later in this document.

A. The Candidate Medical Assessment Form

One of the forms you will be asked to fill out on the date of your BHS appointment is the Candidate Medical Assessment Form. The Candidate Medical Assessment Form asks a number of questions about your medical history, including whether you currently take or have taken certain medications, or whether you currently have, or have a history of, certain:

- conditions;
- illnesses;
- medical procedures; or
- medical statuses.

The Candidate Medical Assessment Form also has space for you to provide additional information about any of the above, including whether you received medical treatment for the medical matters that you have reported.

Please note that you will *not* be automatically disqualified from appointment as a Firefighter just because you disclose that you had (or have) a specific illness, condition, or medical procedure *or* you were certified as disabled by the US Department of Veterans Affairs *or* you were disqualified from service by the US military or another employer. Instead, these circumstances will be evaluated on an individual basis together with your medical history and results of the medical exam. However, *failure to report any of the above can result in your disqualification.*

You will be evaluated individually based on your unique characteristics.

B. The BHS Stations

After you complete the forms, you will go through 12 stations for testing (see **Appendix A for more information about the BHS Stations and Appendix D for helpful instructions**). At the start of your BHS visit, a BHS representative will describe each station so that you will know what will happen and what will be expected of you.

At each station, one or more medical tests will be administered. As you complete each station, you will be directed to the next station by BHS personnel.

Appendix A contains a brief description of each station and some information about the order in which you will go through the stations on the day of your visit, as well as examples of some of the conditions that have been found at each station that require further evaluation of a candidate and that may ultimately disqualify an individual (depending on severity and other considerations).

Appendix D contains helpful information about some of the stations.

C. Components of the Medical Assessment Besides the BHS Stations

In addition to completing each BHS Station, you will have to pass the following:

- (1) A Psychological Evaluation. Within about one month of the date of your BHS exam, you will also be required to complete the Minnesota Multiphasic Personality Inventory (MMPI), which consists of a series of true/false questions. You will also complete a “Biographical Data Sheet.” The Biographical Data Sheet, the results of the MMPI, and any other documentation completed by you will be reviewed by BHS personnel. If it is determined as a result of that review that you may not be able to safely perform the job of a Firefighter, a “Reserved Status” letter will be issued and you will be scheduled to meet in person with a BHS mental health professional. The “Reserved Status” letter is described more fully later in this document.
- (2) A Timed Run. If you pass both the physical and psychological components of the Medical Assessment and assuming that you are otherwise qualified, you will be scheduled for a timed run that takes place at the FDNY Fire Academy shortly before you would be appointed as a probationary Firefighter. You will be required to run 1.5 miles in 13 minutes or less.

IV. COMPLETION OF ALL COMPONENTS OF MEDICAL ASSESSMENT

During a specific station evaluation, BHS may observe a medical condition or status that would medically disqualify you. However, you will be permitted to visit all other stations that make up the BHS medical assessment unless BHS has determined that continuing is medically unsafe. For example, BHS may determine that it is unsafe for you to take the Stairmill Test.

V. YOU WILL NOT KNOW THE RESULTS OF THE BHS MEDICAL ASSESSMENT ON THE DAY OF THE ASSESSMENT

On the day of your visit, BHS personnel will *not* tell you whether you “passed” a specific BHS station. This is because a BHS physician must review the results from each station (including laboratory results which are not immediately available) before any determination can be made. On the day of your visit you will be permitted to complete all 12 stations (whether or not you “pass” the requirements of each station), unless BHS determines that it is unsafe for you to continue.

In some circumstances, BHS may ask you to fulfill some additional conditions or supply additional information, by giving you a “Reserved Status” letter which is described later in this document. If you get a Reserved Status letter, you have **30 days** from the date of the letter to give BHS the additional information requested in the letter, or to meet other conditions set out in the letter. If you get a Reserved Status letter, *be sure to read it carefully and follow the specific directions given by BHS.*

VI. INDIVIDUALIZED EVALUATION

You will be evaluated on an individual basis. What may be a medically satisfactory result for you may not be a satisfactory result for someone else -- no two people are the same and outcomes depend on your overall health and the severity of the specific condition. For example,

someone may report a mild case of hypertension that is controlled with medication and someone else may have a more serious case of hypertension with related medical complications. In some cases BHS will require further information after your BHS appointment to be able to make a determination that you are medically qualified or BHS may require that you meet certain conditions before you are found to be medically qualified. For example, BHS has required some candidates to lose weight, be evaluated by an outside physician, or undergo certain testing before they could be appointed. The particular requirements are determined based on the severity of the item and the candidate's overall medical status.

VII. WHAT IS “RESERVED STATUS”? WHAT ACTIONS DO I TAKE IF I RECEIVE A RESERVED STATUS LETTER?

If you have a medical condition or status that could medically disqualify you from appointment, BHS will, in general, give you the opportunity to correct the condition or status and/or to provide documentation acceptable to BHS showing that you can safely fulfill the job of a Firefighter. In that situation, in order to obtain the necessary documentation, BHS might ask you to undergo further evaluation with medical services providers outside of BHS. If this occurs in your case, you will receive a Reserved Status letter from BHS that outlines any medical condition or status that needs to be addressed prior to appointment. In general you will be given a period of **30 days** from the date of the Reserved Status letter to address the condition or status described in the Reserved Status letter. If you get a Reserved Status letter, *be sure to read it carefully and follow the specific directions given by BHS.*

A. Additional Diagnostic Testing at No Cost to You

The Reserved Status letter may require that you obtain outside testing for BHS review.

If required, BHS may be able to schedule and pay to have the following tests conducted at no cost to you:

- Blood and/or Urine Testing (you may be instructed to fast (not eat) prior to providing a blood sample). These tests are often required for conditions such as: elevated blood sugar, diabetes, abnormal liver or kidney function, or abnormal cell counts such as low platelets.
- Full pulmonary function testing, a methacoline challenge test and/or a chest CT scan. These tests may be required if you show signs of certain pulmonary conditions, like asthma.
- Echocardiogram or stress test. These tests might be required if you show certain cardiac conditions, such as valve problems.
- Imaging (X-ray, CT or MRI scans) of the joint or bones. These tests might be required if you have certain orthopedic issues.

BHS is currently arranging to have certain diagnostic testing available at no cost to candidates, and expects this testing at no cost to candidates to be available soon. If you receive a Reserved Status letter that requires you to obtain one of the tests above, please contact 718-999-1870 or 718-999-1897 to inquire if the testing is available at no cost to you. If additional diagnostic testing is not yet available at no cost to you, you may either (1) choose to have the required diagnostic testing done at your own expense (see Subsection B below), or (2) wait for additional

diagnostic testing at no cost to you to become available. If you choose to wait for additional diagnostic testing at no cost to you to become available, please contact 718-999-1870 or 718-999-1897 and inform BHS of your choice. BHS will contact you when the required diagnostic testing becomes available at no cost to you.

If additional diagnostic testing is available at no cost to you when you receive a Reserved Status letter, or later becomes available, and you choose to have BHS pay for the required diagnostic testing, BHS will schedule your medical appointment for you. BHS will work with you to schedule the testing on a date that is as convenient as possible for you within 30 days of the date of the Reserved Status letter. BHS will give you the details of your testing appointment in writing on the date of your visit to BHS.

You will be required to complete the Consent and Release form, included as Appendix B-1 to this document.

If you are unable to appear for the diagnostic testing appointment as previously scheduled, you must follow the re-scheduling instructions contained in the appointment letter, so that BHS can re-schedule you. If you fail to appear for a scheduled medical appointment and you fail to follow the re-scheduling instructions, you will be issued a Notice of Proposed Medical Disqualification (NOPMD) for Failure to Cooperate.

B. Diagnostic Testing and Other Medical Services Conducted at Your Own Expense

You may choose to have required medical testing done by a medical services provider of your choice. If you choose to do that, those tests will be performed *at your own expense*. BHS will not assist you in scheduling appointments. If you decide to seek testing on your own, you are responsible for making sure the results of the testing reach BHS within 30 days of the date of the Reserved Status letter. If you fail to provide the results of such testing within the 30 day period you will be issued a Notice of Proposed Medical Disqualification.

BHS will not pay for all outside medical testing. For example, the following outside medical testing or services must be obtained at your own expense:

- (i) An opinion from a medical services provider that is being obtained to refute the findings which have been made by BHS; or
- (ii) Any treatment or consultation you seek in response to a condition or status reported on your Reserved Status letter. For example: diabetes, hypertension, orthopedic conditions, or obesity. Although certain conditions may impede your appointment as a Firefighter you are required to pay for any medical treatment(s) that you seek to address a condition. There is no guarantee that treating a condition will be enough to qualify you for appointment.

VIII. SEVERE MEDICAL CONDITION OR STATUS

Whether you are given the opportunity to seek further evaluation of a medical condition or status, and what additional actions will be required of you will depend on the severity of your medical condition and on your overall medical status.

In certain circumstances, BHS will determine that an individual condition or status is so severe and/or that your overall medical status is such that you will be medically disqualified from appointment as a Firefighter, without the need for further follow up. If that happens, you will *not* get a Reserved Status letter. Instead, you will receive a Notice of Proposed Medical Disqualification (NOPMD). If you get a NOPMD, it will tell you how you can challenge BHS's disqualification determination. It will also tell you that you may temporarily decline being considered for appointment as an FDNY firefighter and ask to be restored to the eligibility list at a later date. Temporarily declining consideration for appointment will give you more time to resolve your outstanding medical issue (for example you can use the time to lose weight and get your diabetes under control) but when you reactivate your candidacy you will have to pass the medical exam. If you wish to temporarily decline being considered for appointment as an FDNY firefighter, you may write to the Candidate Investigation Division at CID@fdny.nyc.gov.

IX. WHAT HAPPENS IF I GET A RESERVED STATUS LETTER, BUT I CAN'T DO WHAT THE RESERVED STATUS LETTER ASKS FOR IN 30 DAYS?

If you do not provide requested information in a timely fashion, you will be sent a Notice of Proposed Medical Disqualification (NOPMD). Therefore, it is important to respond in the 30-day window.

If you have a condition that cannot be resolved within 30 days, you can temporarily decline being considered for appointment and ask to be restored to the eligibility list once your condition is resolved by sending an email to the Candidate Investigation Division at CID@fdny.nyc.gov.

X. ADDITIONAL BHS MEDICAL ASSESSMENT

Where it is anticipated that a twelve month period will elapse between the date of your most recent BHS medical assessment and your anticipated hiring date, the FDNY will schedule you for another full BHS medical assessment as set forth above, and you must be found medically qualified after the subsequent medical assessment to continue as a candidate for a firefighter position.

**KEEP READING FOR MORE IMPORTANT INFORMATION ABOUT THE
MEDICAL EVALUATION**

APPENDICES

Appendix A	Brief Description of the BHS Stations
Appendix B	Cardio-Pulmonary Fitness Evaluation and Description of the Stairmill Test
Appendix B-1	Consent and Release
Appendix B-2	Notice of Failure of Second Cardiopulmonary Evaluation
Appendix B-3	Description of Selected Diagnostic Testing
Appendix B-4	Firefighter Candidate Exercise Stress Test Certification
Appendix C	Table of Ideal Weight for FDNY Firefighter Candidates
Appendix D	Selected Instructions to Candidates for Date of BHS Medical Assessment

APPENDIX A

BRIEF DESCRIPTION OF BHS STATIONS

There is no set order in which you will visit the BHS stations, except that BHS personnel will ensure that:

- (1) you visit the Vital Signs, Electrocardiogram (EKG), and Pulmonary Function stations, before the Cardiopulmonary Fitness Evaluation (Stairmill Test) station;
- (2) you visit the Routine Laboratory station at some point after the Stairmill Station;
- (3) you do not visit the Hearing station immediately after the Stairmill Test Station; and
- (4) the BHS Physician Evaluation will usually be the last station you visit.

Below is a brief description of each BHS station, and conditions that may require further evaluation. Please note that the list of conditions is not complete and that there are other types of conditions, which are rarer, that might be identified at a particular station.

STATION NAME	FOCUS OF TEST	EXAMPLES OF CONDITIONS THAT MAY REQUIRE FURTHER EVALUATION
Vital Signs	Blood pressure, height, weight, pulse, and oxygen saturation measurements	<ul style="list-style-type: none">• Systolic blood pressure equal to or exceeding 140 (mmHG)• Diastolic blood pressure equal to or exceeding 90 (mmHG)• Weight exceeding the upper limit of your ideal weight by greater than 20 percent (see Appendix C for ideal weight ranges)• Body Mass Index (BMI) equal to or exceeding 30. The BMI is an integrated measure of weight and height.• Heart Rate (Pulse) equal to or greater than 100 beats per minute
Electrocardiogram (EKG)	Measures cardiovascular activity	<ul style="list-style-type: none">• Any deviation from a normal heart rate and/or a normal sinus rhythm

STATION NAME	FOCUS OF TEST	EXAMPLES OF CONDITIONS THAT MAY REQUIRE FURTHER EVALUATION
Pulmonary Function Test	Measures air flow in lungs. Inhaling and exhaling are measured by a spirometer (candidates will breathe into and out of the device)	<ul style="list-style-type: none"> • Capacity to forcibly exhale (FVC) and forcibly exhale air in one second (FEV1) is less than 80 percent of the predicted value for your height, gender and race² or the ratio of these measures (FEV1/FVC) is less than 0.70 • Evidence of pulmonary disease
Routine Laboratory Test	Blood and urine samples are collected and tested for certain medical conditions	<ul style="list-style-type: none"> • Abnormal red and/or white blood cell count • Abnormal blood or urine glucose • Elevated levels of serum creatinine (a measure of kidney function) • Elevated liver function blood tests <p>Even with a legal prescription, the chronic use of certain categories of substances may be incompatible with the job of a Firefighter. These categories include, but may not be limited to, opiates, pain medications, anti-psychotic medications, sedatives, sleeping pills, beta blockers and anti-coagulants. A positive test for one of these types of substances will require further evaluation. Candidates will be reviewed on an individualized basis, and BHS may have the candidate provide a prescription history, an explanation for the prescription and an opinion as to how long the prescription will be continued from the prescribing physician.</p>
Cardio Pulmonary Fitness Evaluation (Stairmill Test)	See Appendix B	This test is explained in more detail in Appendix B
Laboratory Test for Unauthorized Substances	Candidates provide a urine sample before a witness.	<ul style="list-style-type: none"> • Positive test for an unauthorized substance not reported as a legal prescription to BHS, including, but not limited to, methadone, opiates, heroin, cocaine, barbituates, and benzodiazepine • Any candidate that tests positive for such substances will be sent a Notice of Proposed Medical Disqualification (NOPMD)

² Predicted values are based on a candidate's age, height, ethnicity, and gender, as determined by National Health and Nutrition Examination Survey (NHANES) III; see Global Initiative for Chronic Obstructive Lung Disease, http://www.goldcopd.org/uploads/users/files/GOLD_Report_2014_Jan23.pdf

STATION NAME	FOCUS OF TEST	EXAMPLES OF CONDITIONS THAT MAY REQUIRE FURTHER EVALUATION
Immunization/PPD	Tests for tuberculosis	<ul style="list-style-type: none"> • Positive test for tuberculosis
Hearing	Candidates are placed in a sound proof booth and asked to identify different frequencies of sound transmitted through earphones	<ul style="list-style-type: none"> • Hearing loss in the unaided ear is greater than 40 decibels (dB) at 500 Hz, 1000 Hz, 2000 Hz, and 3000 Hz
Vision	<p>With the use of an electronic vision screener, candidates are tested for near sightedness, far sightedness, depth perception, color and peripheral vision.</p> <p>You may wear glasses or contact lenses during this test</p>	<ul style="list-style-type: none"> • Far vision acuity less than 20/40 binocular (even if corrected with lenses or spectacles) • Monochromatic vision • Monocular vision
Chest X-Ray	Tests for heart, pulmonary, and spinal conditions	<ul style="list-style-type: none"> • Evidence of pulmonary disease • Enlarged heart • Severe scoliosis • Use of a heart pacemaker or implantable defibrillator
Face Piece Fitting	Tests ability to wear the breathing mask used to perform Firefighter duties	<ul style="list-style-type: none"> • Inability to wear face piece with a proper seal due to, for example, facial hair or facial deformity

STATION NAME	FOCUS OF TEST	EXAMPLES OF CONDITIONS THAT MAY REQUIRE FURTHER EVALUATION
BHS Physician Evaluation	Review of data and documentation, interview of candidate, and physical examination	<ul style="list-style-type: none"> • Any item listed above • A medical abnormality that would not be found during an assessment already made by BHS, such as a heart murmur • Where BHS has determined that the candidate is not able to safely complete the BHS assessment, the reasons for BHS's determination will be reviewed with the candidate.

APPENDIX B

Cardio-Pulmonary Fitness Evaluation and Description of the Stairmill Test

One of the required BHS stations is a cardio-pulmonary fitness evaluation test, which is conducted on a stairmill (this is referred to here as the “Stairmill Test”).

1. Ability to Take Stairmill Test

Before you can begin the Stairmill Test, a nurse will review your completed Candidate Medical Assessment Form and the results from the Vital Signs, EKG, and Pulmonary Function Test stations to check for any medical conditions that may make it unsafe for you to proceed with the Stairmill Test. Such conditions may include:

- (a) A systolic blood pressure exceeding 140 (mmHg) or a diastolic blood pressure exceeding 90 (mmHg);
- (b) An irregular heartbeat;
- (c) A bone fracture that occurred within the last 12 months;
- (d) The chronic use of prescribed medication including, but not limited to, blood thinners, beta blockers, sedatives, and narcotics;
- (e) A history of heart disease, including a heart stent;
- (f) A history of stroke;
- (g) Morbid obesity;
- (h) Recent surgery; or
- (i) A history of pulmonary disease.

If you have any of these conditions, or any other condition or test results which, in the nurse’s medical opinion, indicate that you should not proceed with the Stairmill Test, you will be verbally notified that you may not take the Stairmill Test until a BHS physician reviews your condition(s) and/or medical test result(s), examines you, and makes a decision about whether you can safely proceed with the Stairmill Test. Even if you cannot proceed with the Stairmill Test, you will be permitted to complete other parts of the medical assessment (unless BHS has determined that it is not safe for you to continue with those other parts). The Stairmill Test (or an acceptable alternative test described in this Appendix) must be successfully completed, however, before you can be appointed as a Firefighter. You will have three attempts (on different days) to pass the Stairmill Test and, if you cannot pass it, one attempt to pass the alternative test.

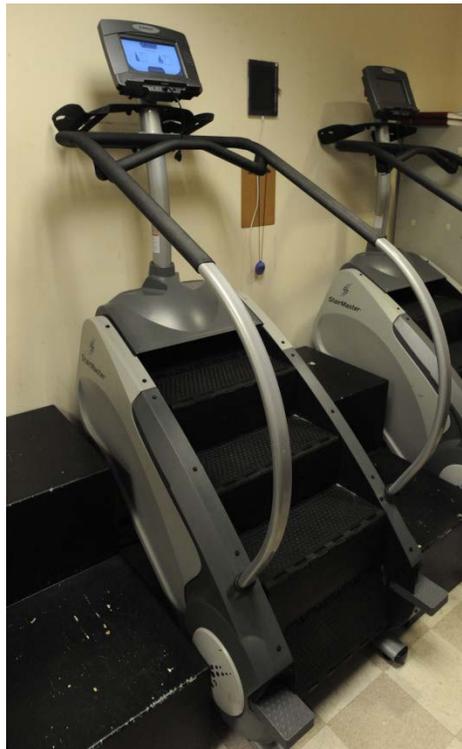
If BHS determines, after reviewing your conditions and examining you, that you are not able to safely proceed with the Stairmill Test on the day of your medical exam, you will be sent a Reserved Status letter stating those conditions that need to be addressed before you may safely proceed with the Stairmill Test. Although any Reserved Status letter you receive will address

your individual circumstance, examples of issues that other people have been required to address in the past before being allowed to take the Stairmill Test include: morbid obesity, high blood pressure, a rapid heart rate, and bone fractures.

Remember, if you get a Reserved Status letter, read it carefully and pay attention to any requirements and deadlines. Before you will be allowed to take the Stairmill Test, BHS must determine that issues identified by BHS that prevented you from safely proceeding with the Stairmill Test have been addressed. As explained below, BHS may offer to schedule you for certain types of diagnostic testing at no cost to you, unless you opt to schedule yourself for such testing at your own expense.

2. What Happens at the Stairmill Test

The Stairmill Test takes place on a stairmill machine. A stairmill is different from stair stepper machines, which are more typically found in gyms. The Stairmill Test was chosen because it simulates one of the essential job tasks of a Firefighter. Below is a picture of the type of stairmill on which the test is administered. It is the same machine you used during your CPAT, but the stairmill portion of the CPAT differs from the Stairmill Test for the BHS medical assessment.



We encourage you to practice on a stairmill machine before the medical exam so that the day of the medical exam is not the first time you try the machine. Some local gyms have stairmill machines. You can also purchase a 50-pound weighted vest to practice with, since such a vest is used during part of the Stairmill Test. If you do not have access to a gym with a stairmill, you can practice by climbing stairs in the stairwell of a building wearing a 50-pound vest or carrying 50 pounds. Climb at one step per second (60 steps per minute) without touching the handrails or sidewalls, as described below.

On the date of the Stairmill Test, an Emergency Medical Technician (EMT) or nurse will place a heart monitor on you for the entire test. An EMT will use this to monitor your heart rate and will record your heart rate at the end of each phase of the Stairmill Test. BHS has also installed electronic tablets at this station so you can see your heart rate in real time.

For each candidate taking the Stairmill Test, a uniformed member of the FDNY will be present in the Stairmill station to act as a spotter for that candidate, and the test will be conducted under the oversight of a BHS physician. A BHS physician will observe you for signs of dizziness, distress, or any condition which could cause harm to you.

The Stairmill Test has two phases. During each phase, you will climb on the stairmill at the rate of one step per second (60 steps/minute).

During the Stairmill Test, you may not touch any part of the stairmill with your hands. If you touch the stairmill with your hands for any reason (whether because of dizziness, physical distress, inability to complete a phase of the Stairmill Test, or any other reason), BHS personnel will turn off the machine and discontinue the test.

Note that in addition to not touching the stairmill machine while you are taking the Stairmill Test:

- You must climb on the stairmill one step at a time and avoid bouncing or bumping onto any part of the stairmill.
- You are not permitted to wear any joint bracing or support, and cannot wear your own personal heart monitor.
- You will see your heart rate displayed on an electronic tablet next to the stairmill machine. The stairmill machine itself will display the amount of time that elapses during each phase of the test.
- BHS personnel are not permitted to communicate with or otherwise distract you from completing the test, unless they observe a condition which could harm you.
- You are not permitted to wear earplugs/earbuds or anything else that could inhibit necessary communications with BHS personnel.

If any of the following occur, the Stairmill Test will be discontinued and you will not be considered to have passed the test:

- Your heart rate exceeds certain maximum rates, described in sections 3, 4, and 5, below.

- You touch the stairmill with one or both of your hands.
- BHS personnel observe signs of dizziness, distress or any condition which could cause harm to you.

3. Stairmill Test Phase One (3:02)

During Phase One of your first attempt at the Stairmill Test, you will be asked to climb the stairmill for 3 minutes and 2 seconds (3:02) at the rate of one step per second. You will wear a heart monitor, and your heart rate will be monitored continuously. At the end of this period, BHS personnel will stop the stairmill and check your heart rate.

- If your heart rate immediately upon completion of Phase One *is equal to, or less than, the FDNY Target Heart Rate for your age* (see section 5, below), you will have 5 minutes to rest and then be allowed to proceed to Phase Two.
- If your heart rate immediately upon completion of Phase One *is more than the FDNY Target Heart Rate for your age*, the Stairmill Test will be discontinued but you will be permitted to complete the remainder of the medical exam, unless BHS determines that it would be unsafe for you to continue with the medical exam. As discussed later in this document, you may be permitted to attempt the Stairmill Test on a second occasion on a later date.

4. Stairmill Test Phase Two (5:12 or 8:00)

During Phase Two, you will be required to climb the stairmill wearing a 50 pound weighted vest and the heart monitor, and you will be observed by a BHS physician. You must climb the stairmill for 5 minutes and 12 seconds (5:12) at the rate of one step per second. At the 5:12 mark, your heart rate will be recorded and compared to the FDNY Target Heart Rate for your age.

- If your heart rate immediately upon completion of Phase Two does not exceed the FDNY Target Heart Rate for your age, you will have passed the Stairmill Test with no further climbing required.
- If your heart rate immediately upon completion of Phase Two exceeds the FDNY Target Heart Rate for your age, but you do not (in the judgment of the BHS physician) exhibit any signs of dizziness, physical distress or any condition which could cause harm to you, you will be permitted to **stay on the stairmill for another two minutes and forty eight seconds (2:48) past the normal end point of Phase Two**, for a total uninterrupted climbing period of eight minutes (8:00). If you are permitted to continue with the additional 2:48 period and can complete it without visual signs of dizziness, physical distress, or any condition that could cause harm to you, as determined by the BHS physician (even though your heart rate goes above the FDNY Target Heart Rate for your age), you shall be deemed to have passed the Stairmill Test.
- If the BHS physician determines you cannot begin or complete the additional 2:48 period, you either will be permitted to take the Stairmill Test again on another day

or be required to address certain conditions, as described below in section 6. You will be permitted to proceed with the remainder of the medical exam, unless safety reasons preclude your continuing.

You can only attempt the Stairmill Test once each visit but, depending on assessments of your health, you may be permitted to attempt the Stairmill Test up to three times on different dates, as described in the rest of this document. You may be able to become a Firefighter if you can either (a) pass the Stairmill Test or (b) submit the results of an exercise stress test showing that you are able to obtain a workload of at least twelve (12) METs,³ which is a measure of your aerobic capacity. If you pass the Stairmill Test at any point and you meet all other requirements of the BHS medical assessment, you will be considered medically qualified.

5. FDNY Target Heart Rate

Your FDNY Target Rate is 90% of the predicted maximum heart rate for your age, which is 220 minus your age on the date of the Stairmill Test multiplied by 90 percent or:

$$(220 - \text{Age}) \times 0.90$$

³ A “MET” is a Metabolic Equivalent. The Metabolic Equivalent standard is used to measure aerobic capacity during physical activity. Firefighter candidates must demonstrate aerobic capacity of at least twelve (12) METs, which has been accepted as the minimum fitness level to safely perform many of the essential job tasks of firefighting. See National Fire Protection Association (NFPA) 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments, Section 6.9.

The following table is based on the above formula and is used by the FDNY:

Candidate's Age	Target Heart Rate (Beats Per Minute)
21	179
22	178
23	177
24	176
25	176
26	175
27	174
28	173
29	172
30	171
31	170
32	169
33	168
34	167
35	167
36	166
37	165
38	164
39	163
40	162

6. What Happens if You Do Not Pass the Stairmill Test the First Time

If a determination is made on the day of your medical assessment that you cannot safely proceed with the Stairmill Test, or if you do not successfully complete the Stairmill Test, a BHS physician will assess you in person. Based on the physician's examination and review of available documentation, you will either:

- (a) Be permitted, without further requirements, to make a second attempt at the Stairmill Test on a later date (to be scheduled by FDNY on a date agreed to by you that is between 30 and 45 days from the date of your first attempt); **or**
- (b) Not be permitted to proceed with a second attempt *unless* you address certain conditions to the satisfaction of BHS. These conditions will be determined by the BHS physician and communicated to you in writing in a "Reserved Status" letter. Depending on the BHS physician's findings, these conditions could include, but are not limited to:
 - (i) Post-test abnormal blood pressure;
 - (ii) Post-test rapid/irregular heart beat; or

- (iii) Post-test abnormal breathing, such as wheezing, shortness of breath, or difficulty breathing.

If you are sent a “Reserved Status” letter, you will have a period of 30 days to address the conditions communicated in the letter.

BHS may offer to schedule you for certain types of diagnostic testing at no cost to you, unless you opt to schedule yourself for such testing at your own expense.

A BHS physician will review the new documentation BHS obtains (if you are scheduled by BHS for diagnostic testing) or that you submit (if you schedule yourself for required diagnostic testing or for medical service(s)) within the 30 days and determine whether you may be permitted to proceed with a second attempt at the Stairmill Test. If the BHS physician determines that you are medically able, you will be scheduled for a second attempt at the Stairmill Test. If the BHS physician determines that you are not medically able to proceed with the second attempt at the Stairmill Test, the FDNY will find that you are medically not qualified to become a Firefighter and the FDNY will issue a Notice of Proposed Medical Disqualification to you stating the reasons for such disqualification.

7. Scheduling of Second Attempt Stairmill Test for Eligible Candidates

If you are eligible to take the Stairmill Test a second time, BHS will schedule the test on a date to which you agree, which will be between 30 and 45 days from the date of your first attempt.

8. Second Attempt Stairmill Test Procedure

On the day of your second attempt at the Stairmill Test, you will have to revisit the Vital Signs station, and the results of that station will be reviewed by BHS medical personnel. Unless the personnel identify an issue, you will be allowed to proceed. If an issue is identified when you revisit the Vital Signs station, you will be sent a Reserved Status letter, as described in sections 1 and 6, above. You may still qualify for a third attempt at the Stairmill Test, following the procedures described in section 9, below.

The second attempt at the Stairmill Test is the same as the first attempt, described in sections 3, 4, and 5, above, **except** you will be permitted to proceed to Phase Two even if your post-Phase One heart rate is greater than the FDNY Target Heart Rate for your age, as long as you are able to complete the test without (in the judgment of the BHS physician) exhibiting any signs of dizziness, physical distress or any condition which could cause harm to you.

9. If You Fail Your Second Attempt at the Stairmill Test

If you do not pass the Stairmill Test on your second attempt, you will be sent a Notice of Unsuccessful Attempt to Complete the Second Cardiopulmonary Evaluation (Appendix B-2).

You may still be able to become a Firefighter if you can provide satisfactory medical assessments indicating, in the opinion of BHS, that you can take the Stairmill Test a third time and either (a) pass your third attempt at the Stairmill Test, or (b) submit the results of an exercise stress test showing that you are able to obtain a workload of at least twelve (12) METs. Before you are eligible to try either a third Stairmill Test or an exercise stress test, BHS requires

evidence that your inability to pass the Stairmill Test is not due to certain underlying physical conditions that could pose a risk to you or others if you become a Firefighter.

(a) You Must Provide Satisfactory Echocardiogram and Methacholine Test Results to Continue with Further Testing

If you want to attempt the Stairmill Test a third time, or you want to submit the results of an exercise stress test showing that you are able to obtain a workload of at least twelve (12) METs, BHS must review both:

- (i) The results of a two-dimensional echocardiogram, which is used to check if you have a structural heart defect; and
- (ii) The results of a methacholine challenge test, which is used to check if you have asthma or other airway disease.

A more detailed description of this medical screening is found in Appendix B-3.

(b) Medical Screening Provided at No Cost to You

You have the option of being scheduled for the two-dimensional echocardiogram and the methacholine challenge test at no cost to you. If you choose this option, BHS will schedule you on a date or dates that are convenient for you. You are required to appear for the medical screening as scheduled, unless you request and receive permission to re-schedule the medical screening according to the rescheduling instructions that will be given to you. If you fail to appear for the medical screening as scheduled, and you did not request and receive permission to re-schedule the testing, the FDNY will issue a Notice of Proposed Medical Disqualification (NOPMD) to you for Failure to Cooperate.

(c) Medical Screening Obtained at Your Expense

You also have the option to get the medical screening done by a medical services provider of your choice, at your expense. If you require more than 30 days to secure the medical documentation of this outside medical screening, you may request additional time, as set forth in the scheduling instruction that will be given to you. If you fail to submit the results of the two-dimensional echocardiogram or the methacholine challenge test within the 30-day period, and you fail to request and be granted additional time, the FDNY will issue a Notice of Proposed Medical Disqualification to you.

(d) BHS Review of Medical Screening Results and Additional Documentation

A BHS physician will review the results of the two-dimensional echocardiogram and the methacholine challenge test.

- If the results are medically acceptable to the BHS physician, you will be allowed to proceed with a third attempt at the Stairmill Test, and BHS will call you to schedule a test date within 30 days of the call. (As an alternative to a third-attempt Stairmill Test, you may choose to take an exercise stress test, as described in section 11 below.)

- If the BHS physician finds that the result of one or more of the medical screenings is not medically acceptable, BHS will, as soon as possible, send you a written notice. This notice will advise you that you may, at your own expense, provide a written opinion prepared by a medical doctor stating that you have been examined by such doctor and including that doctor's written opinion as to your physical fitness to take the Stairmill Test. The written opinion should specify why you are medically able to take the Stairmill Test. Please be advised that a cursory medical opinion stating that you are fit for firefighting duty, in general, will not be acceptable to BHS. Such additional medical opinion must be provided to BHS by you or your doctor within 30 days of the BHS written notice. The documentation from your doctor must address the specific medical conditions which have been communicated to you. The additional documentation will be reviewed by a BHS physician and, if found to be medically acceptable, BHS will, as soon as possible, call you to schedule you for a third attempt at the Stairmill Test within 30 days from the date of BHS's telephone call. (As an alternative to a third attempt at the Stairmill Test, you may choose, if BHS finds the opinion of your doctor medically acceptable, to take an exercise stress test, as described in section 11 below.)
- If: (i) you receive the written notice that BHS has found that the result of one or more of your required medical screenings is not medically acceptable, and you do not submit the opinion of a medical doctor within the deadline provided (and you have not requested and received an extension for submitting the medical opinion), **or** (ii) BHS determines that the medical opinion you submit is not medically acceptable, the FDNY shall issue a Notice of Proposed Medical Disqualification to you.

10. Third Attempt at Stairmill Test

If, after reviewing the results of the two-dimensional echocardiogram and the methacholine challenge test (or sufficient documentation from a medical doctor, as described in section 9(d) above), BHS finds you eligible to take the Stairmill Test a third time and you decide to take that test, the procedure for the third attempt at the Stairmill Test will be identical to the procedure for the second attempt, as described above in section 8.

11. Exercise Stress Test

If you are eligible to take the Stairmill Test a third time, you can choose instead to undergo an exercise stress test. You can also take the exercise stress test if you decide to try the Stairmill Test a third time and are unable to complete it successfully. If the results of the exercise stress test show that you are able to safely attain a workload of at least 12 METs and you have satisfied all other requirements of the BHS medical assessment, you will be medically qualified, even if you failed to pass the Stairmill Test. See Appendix B-3 for a description of the exercise stress test. If you are unable to provide the results of a stress test within the required deadline, or the results do not show that you are able to safely attain a workload of at least 12 METs, the FDNY will issue a Notice of Proposed Medical Disqualification to you.

(a) Exercise Stress Test Scheduled by BHS at No Cost to You

You have the option of being scheduled for the exercise stress test at no cost to you. If you choose this option, BHS will schedule you on a date that is convenient for you.

(b) Exercise Stress Test Scheduled by You at Your Own Cost

You also have the option of providing the results of an exercise stress test that is administered by a medical services provider of your choice, at your own expense. The results of this stress test must be received by BHS within 30 days of the date that you took your most recent Stairmill Test, unless you request and receive an extension.

If it is convenient, you may schedule the exercise stress test at about the same time as the two-dimensional echocardiogram and methacholine challenge (if you are paying for these tests yourself). However, BHS will *not* consider the results of the exercise stress test unless it finds that the results of the two-dimensional echocardiogram and methacholine challenge are acceptable. If the results are not acceptable to BHS, BHS will not consider the results of the exercise stress test and the FDNY will issue a Notice of Proposed Medical Disqualification to you.

(c) Firefighter Candidate Exercise Stress Test Certification

The medical services provider who administers the exercise stress test (whether scheduled by BHS or by you) will be required to complete a Firefighter Candidate Exercise Stress Test Certification (found in Appendix B-4), confirming whether you have or have not safely attained the 12 METs requirement.

12. Consent Form for Medical Testing Offered at No Cost to You

If you choose to obtain any medical testing offered at no cost to you, you will be required to complete the “Consent and Release Form,” a copy of which is included as Appendix B-1 to this document.

The City will not be liable for any injury or illness that you suffer from the medical testing provided at no cost to you.

APPENDIX B-1

CONSENT AND RELEASE

I _____, consent to participate in the following medical testing at no cost to me (please indicate your preference by inserting your initials):

_____ Two Dimensional Echocardiogram

_____ Methacholine Challenge Test

_____ Exercise Stress Test (to 12 Metabolic Equivalents (METs))

_____ OTHER (to be inserted by BHS):

To the best of my knowledge, I have no cardio-pulmonary disease, including asthma, and I am medically able to participate in any part of the medical testing that is being offered to me.

I have been given the opportunity to direct any questions concerning any part of the medical testing, including side effects, to the FDNY Bureau of Health Services. I will receive a copy of the results of any medical testing. If I wish to discuss the results of such medical testing with a medical services provider to determine any diagnosis or need for further medical treatment, it must be with a medical services provider of my own choosing and at my own expense.

In consideration for obtaining any part of the medical testing at no cost to me, I hereby release and hold harmless the City of New York, its agencies, officers, employees and agents, from any and all claims, causes of action, suits, damages or judgments, related to any injury or illness that I, my heirs, executors, administrators and assigns, EVER HAD OR WILL HAVE, in connection with any part of the medical testing arranged for me by BHS and paid for by the FDNY.

I understand that this Consent and Release shall not affect any rights that I may have to challenge a medical disqualification under the NY Civil Service Law, should I be deemed to be medically disqualified.

Candidate Signature

Candidate Printed Name

Witness Name

Witness Signature

Date



FIRE DEPARTMENT

BUREAU OF HEALTH SERVICES

9 METROTECH CENTER BROOKLYN, N.Y. 11201-3857

Telephone: 718-999-1870

APPENDIX B-2

NOTICE OF UNSUCCESSFUL ATTEMPT TO COMPLETE THE SECOND CARDIOPULMONARY EVALUATION

DATE: _____

CANDIDATE LAST NAME: _____

CANDIDATE FIRST NAME: _____

LAST FOUR OF SOCIAL SECURITY NO: _____

THIS CONFIRMS THAT ON THE DATE STATED ABOVE, YOU DID NOT SUCCESSFULLY COMPLETE THE SECOND CARDIOPULMONARY EVALUATION (ALSO CALLED THE "STAIRMILL TEST").

In order to fulfill the requirements of the Cardiopulmonary Evaluation, you are permitted (subject to review by the Bureau of Health Services ("BHS") of the results of medical screening) to take a third Stairmill Test or to provide the results of an Exercise Stress Test that must show that you are able to attain a workload of at least twelve (12) metabolic equivalents (METs).

You will be given the opportunity to be scheduled for a Methacholine Challenge Test and an Echocardiogram at no cost to you. You may also schedule yourself for these tests at your own expense. BHS must review the results of these tests before you may be scheduled for a third Stairmill Test, or as an alternative, an Exercise Stress Test.

If the results of the Methacholine Challenge Test and an Echocardiogram are not acceptable to BHS, you will be sent a Notice of Proposed Medical Disqualification.

If the results of the Methacholine Challenge Test and an Echocardiogram are acceptable to BHS, you will be scheduled for a third Stairmill Test, or as an alternative, an Exercise Stress Test.

Candidate Signature

BHS Representative Signature

APPENDIX B-3

DESCRIPTION OF SELECTED DIAGNOSTIC TESTING

TWO DIMENSIONAL ECHOCARDIOGRAM: This is a non-invasive diagnostic test that uses ultrasound to look at the heart size, wall motion, heart valves and ejection fraction of the heart. This test looks for underlying structural or mechanical heart problems that may be the reason for your inability to exercise at a moderate to high level, complete the Stairmill Test, or to meet the heart rate requirements for the Stairmill Test.

METHACHOLINE CHALLENGE TEST: This is a pulmonary diagnostic test for airway reactivity or asthma. During this test, your breathing capacity is measured after each successive inhaled dose of methacholine – a nonspecific irritant. The test continues until either the maximum dose of methacholine is reached or the test is terminated because your breathing has decreased by 20% of your baseline or to levels that are deemed unsafe by the expert administering the test. At the conclusion of the test, you may be required to inhale a bronchodilator (a substance that dilates the airways to the lungs) to determine whether your breathing improves. If the result of the methacholine test is positive or abnormal, it may indicate that you have asthma or reactive airways disease, which may be the reason for your inability to exercise at a moderate to high level, complete the Stairmill Test, or meet the heart rate requirements for the Stairmill Test. The results of the methacholine challenge test may also show diminished lung capacity, as measured during one second of forced expiratory volume (FEV1) or the forced vital capacity, which is the total amount of air forcibly exhaled (FVC). Any of the above abnormalities may cause a candidate to be medically disqualified.

EXERCISE STRESS TEST (TO 12 METs): This diagnostic test helps to determine how well the heart responds to exertion. You will walk and/or run on a treadmill, and should wear comfortable clothing and exercise footwear. The person administering the test will gradually increase the speed and elevation of the treadmill to determine whether you can safely exercise at a moderate to high level (metabolic performance to 12 METs). You will be monitored using external (non-invasive) electrodes, similar to when you had your resting electrocardiogram during your medical evaluation. The test will be administered by a technician who will observe your heart rate, blood pressure and heart rhythm pattern and stop the test early if any of these become abnormal or if you appear to be in undue distress. You can also voluntarily stop the test at any time.

THE TEST DESCRIPTIONS FOUND ABOVE ARE GENERAL. TEST PROTOCOLS MAY DIFFER SOMEWHAT FROM PROVIDER TO PROVIDER. THE FIRE DEPARTMENT DOES NOT OVERSEE AND IS NOT RESPONSIBLE FOR TEST PROTOCOLS ASSUMED BY OUTSIDE MEDICAL SERVICES PROVIDERS.

APPENDIX B-4

**FIREFIGHTER CANDIDATE EXERCISE STRESS TEST
CERTIFICATION FORM**

First Name of Candidate: _____

Last Name of Candidate: _____

Date of Birth: _____

Last Four Digits of Social Security Number: _____

The Section Below Shall be Completed by the Medical Services Provider Who Administers
the Exercise Stress Test

Name	
Office Name	
Address	
Telephone	
License No.	
Date of Exercise Stress Test	

I, _____, hereby certify that I
administered an Exercise Stress Test upon the candidate named above. The candidate (please
initial the result that applies):

_____ WAS ABLE to safely attain a workload of at least twelve (12) Metabolic Equivalents
(METs).

_____ WAS NOT ABLE to safely attain a workload of at least twelve (12) Metabolic
Equivalents (METs).

Signature of Provider

Please Submit this Completed Form to: Chief Medical Officer, Bureau of Health Services, 9
MetroTech Center, Room 2E-4, Brooklyn, NY 11201, with the original report of the results of
the Exercise Stress Test.

APPENDIX C

TABLE OF IDEAL WEIGHT FOR FDNY FIREFIGHTER CANDIDATES

ADULT MALES

HEIGHT	IDEAL WEIGHT RANGE	UPPER LIMIT	TWENTY (20) PERCENT ABOVE UPPER LIMIT
5' 2"	138-150	150	180.0
5' 3"	140-153	153	183.6
5' 4"	142-156	156	187.2
5' 5"	144-160	160	192.0
5' 6"	146-164	164	198.0
5' 7"	149-168	168	201.6
5' 8"	153-172	172	206.4
5' 9"	155-176	176	211.2
5' 10"	158-180	180	216.0
5' 11"	161-184	184	220.8
6' 0"	164-188	188	225.6
6' 1"	168-192	192	230.4
6' 2"	172-197	197	236.4
6' 3"	176-202	202	242.4
6' 4"	181-207	207	248.4

APPENDIX C (Continued)

ADULT FEMALES

HEIGHT	IDEAL WEIGHT RANGE	UPPER LIMIT	TWENTY (20) PERCENT ABOVE UPPER LIMIT
4' 10"	118-131	131	157.2
4' 11"	120-134	134	160.8
5' 0"	122-137	137	164.4
5' 1"	125-140	140	168.0
5' 2"	128-143	143	171.6
5' 3"	131-147	147	176.4
5' 4"	134-151	151	181.2
5' 5"	137-155	155	186.0
5' 6"	140-159	159	190.8
5' 7"	143-163	163	195.6
5' 8"	146-167	167	200.4
5' 9"	149-170	170	204.0
5' 10"	152-173	173	207.6
5' 11"	155-176	176	211.2
6' 0"	158-179	179	214.8

APPENDIX D

Selected Instructions to Candidates for Date of BHS Medical Assessment

In addition to any guidance that you have already received from the Fire Department, please note the following:

Inquiries – BHS encourages candidates to direct any questions or concerns to an officer as soon as possible, so that these matters may be addressed as they arise. Officers are dressed in uniform and wear white shirts.

Personal Health – BHS strongly encourages candidates to be in good health for their BHS assessment. If, upon arrival, you discover that you do not feel well or are recovering from an injury, we recommend that you re-schedule your BHS appointment. If an injury or medical condition is discovered after you have commenced the assessment, BHS will discontinue the assessment and you will be directed to meet with a BHS physician, who will determine whether you may proceed with the assessment.

Cell Phones – Phones are not allowed in the testing areas. Personal items may be stored in a gym or duffel bag that will be kept in a training room. If you need to make a telephone call during the assessment, please notify an officer, who will assist you.

Vital Signs – On the date of your assessment, your height will be measured in the Vital Signs station. Please ensure that your hair is worn in such a manner or style that the height bar may rest comfortably atop your head. In addition, certain head coverings may require removal. If you require a religious accommodation, please refer to page 1 of this Document for contact telephone numbers.

Pulmonary Function Test – You will be instructed to breathe into and out of a spirometer, a device that measures the amount of air flowing in and out of your lungs. Please follow the instructions that will be given to you by the technician, who will guide you through the process.

Nurse Review – A nurse will review the results of the Vital Signs, EKG, and Pulmonary Function stations to ensure that you may proceed with the Cardio-Pulmonary Fitness Evaluation (Stairmill Test).

Blood Work – Blood work will not be taken until after you have completed the Stairmill Test. If you bring a snack bar or fruit, wait until after your blood work is done to eat your food.

Hearing - The Hearing Station may not be visited directly after the Stairmill Test, as all you might hear is your heartbeat.

Vision – You should bring and wear eyeglasses or contact lenses during the eye exam, if you use either of these.

BHS Physician – When you meet with a BHS physician, you will have the opportunity to discuss any medical history or condition not previously disclosed on your Candidate Medical Assessment form. If necessary, you may amend the Candidate Medical Assessment form. However, your intentional failure to disclose information in response to questions in your Candidate Medical Assessment form could result in your disqualification.

Chest X-Ray – BHS will take a chest X-Ray of all candidates. After you have met with a BHS physician, the need for one or more additional X-Rays may be required, and you will be directed to the X-Ray station if one or more additional X-rays is required.