

NFPA®

1582

Standard on
Comprehensive Occupational
Medical Program for Fire
Departments

2022



NFPA® 1582

Standard on Comprehensive Occupational Medical Program for Fire Departments

2022 Edition



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NFPA® 1582

Standard on

Comprehensive Occupational Medical Program for Fire Departments

2022 Edition

This edition of NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*, was prepared by the Technical Committee on Fire Service Occupational Safety. It was issued by the Standards Council on March 18, 2021, with an effective date of April 8, 2021, and supersedes all previous editions.

This edition of NFPA 1582 was approved as an American National Standard on April 8, 2021.

Origin and Development of NFPA 1582

The initial mandatory medical requirements for candidates for firefighter were in the 1974 edition of NFPA 1001, *Standard on Professional Qualifications for Fire Fighter*. When the first edition of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, was issued in 1987, it required all members engaged in emergency operation to be examined by a physician at least annually and suggested the medical examination be developed and administered by the fire department physician in recognition of the specific requirements of the members' activities.

In the late 1980s, members of the Technical Committee on Fire Fighter Professional Qualifications (responsible for NFPA 1001) and members of the Technical Committee on Fire Service Occupational Safety and Health (responsible for NFPA 1500) formed a working group to develop a new standard on medical requirements for firefighters.

The first edition of NFPA 1582 was titled *Standard on Medical Requirements for Fire Fighters* and was issued in 1992 under the responsibility of the Fire Service Occupational Safety and Health Committee. A subsequent edition was issued in 1997. The 2000 edition was titled *Standard on Medical Requirements for Fire Fighters and Information for Fire Department Physicians*, in recognition of the increasing amount of guidance being provided in the document to persons serving as fire department physicians.

The title of the 2003 edition was changed to *Standard on Comprehensive Occupational Medical Program for Fire Departments* to reflect a comprehensive occupational medical program. The document included references to the IAFC-IAFF Fire Service Joint Labor-Management Wellness-Fitness Initiative, and to NFPA 1583, *Standard on Health-Related Fitness Programs for Fire Fighters*. These two documents outline a health-related fitness program that is medically validated against NFPA 1582.

The 2003 edition delineated between medical issues of a candidate seeking to become a fire fighter, and those of incumbents currently performing the tasks of firefighting. The intent with incumbents with a medical condition is to rehabilitate them and only restrict them from performing those essential job tasks where their injury or illness would affect the safety of themselves or others on their crew.

In the 2007 edition, new requirements were added to both the chapter on medical evaluation for candidates and the chapter on specific evaluation of medical conditions in incumbents to allow persons with diabetes to enter the fire service or continue performing essential job tasks associated with firefighting if they meet defined criteria. All the medical conditions that govern whether a person can become a firefighter and the specific medical conditions of incumbents that affect their ability to perform certain essential job tasks were reviewed and updated, if appropriate, based on current medical research and knowledge.

For the 2013 edition, the committee, with the assistance of several task groups and subject matter experts in specialty areas with regard to medical conditions, updated many of the medical requirements to reflect current practices. Some of the areas that were addressed were that of diabetes, metabolic syndrome, prosthetic adjuncts, hearing aids, and cochlear implants, as well as

pregnancy and reproductive system concerns. Also developed for the 2013 edition was a new annex designed to assist the end user with the subject of pregnancy. The committee, with the assistance of the International Association of Fire Fighters, provided an updated Annex C, which contains the protocols for the evaluation of fitness for members. The committee also updated some of the medical requirements relating to hypertension, anticoagulants, TB testing, and screening for cancer.

For the 2018 edition, the committee, with the assistance of several task groups and subject matter experts in specialty areas with regard to medical conditions, updated many of the medical requirements to reflect current practices. Some of the areas that were addressed were lung function, spinal injuries/conditions, and seizure disorders. A new section was added to the annual fitness evaluation regarding lung function performance. The committee updated all of the annex material in order to provide the best guidance and references for physicians and fire departments.

The 2022 edition includes expanded and revised material on psychiatric, psychological, and behavioral health, updated essential job tasks (Sections 5.1 and 9.1), and improved alignment of the medical evaluation criteria in Chapters 6 and 9. In addition, updated guidance on cancer screening has been added. The annex on “Protocols for Evaluation of Fitness of Members” was eliminated and replaced with a reference to the *Fire Service Joint Labor Management Wellness-Fitness Initiative (WFI)* in Chapter 8. The annex on “Maternal and Child Health Considerations” was updated in accordance with the latest research and information.

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Standard on

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NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

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Information on referenced and extracted publications can be found in Chapter 2 and Annex F.

Chapter 1 Administration

1.1 Scope. This standard contains descriptive requirements for a comprehensive occupational medical program for fire departments.

1.1.1* The medical requirements in this standard are applicable to fire department candidates and members whose job descriptions as defined by the authority having jurisdiction (AHJ) are outlined in NFPA 1001; NFPA 1002; NFPA 1003; NFPA 1006; NFPA 1021; and NFPA 1051.

1.1.2 This standard provides information and guidance for physicians and other health care providers responsible for fire department occupational medical programs.

1.1.3* The requirements in this standard are applicable to public, governmental, military, private, and industrial fire department organizations providing rescue, fire suppression, hazardous materials mitigation, special operations, and other emergency services.

1.1.4 This standard shall not apply to industrial fire brigades that also can be known as emergency brigades, emergency response teams, fire teams, plant emergency organizations, or mine emergency response teams.

1.2 Purpose. The purpose of this standard is to outline an occupational medical program that, when implemented in a fire department, will reduce the risk and burden of fire service occupational morbidity and mortality while improving the health, and thus the safety and effectiveness, of firefighters operating to protect members of the public's life and property.

1.2.1 The standard specifies the following information:

- (1) Minimal medical requirements for candidates as delineated in Chapter 6
- (2) Occupational medical, behavioral health, and physical fitness evaluations for members as delineated in Chapters 7 and 8
- (3)* Information regarding fire department activities and essential job tasks that assist the department physician in providing proper medical, behavioral health, and physical fitness support for members
- (4) Methods and types of data that must be collected to sustain comprehensive occupational medical programs for fire departments

1.2.2* The implementation of the medical requirements outlined in this standard ensures that candidates and current members are medically capable of performing their required duties and will reduce the risk of occupational injuries and illnesses.

1.2.3 Nothing herein is intended to restrict any jurisdiction from exceeding these minimum requirements.

1.3 Implementation.

1.3.1 For candidates, the medical requirements of this standard shall be implemented when this standard is adopted by an AHJ on an effective date specified by the AHJ.

1.3.2* When this standard is adopted by a jurisdiction, date(s) shall be set for members to achieve compliance by establishing a phase-in schedule for compliance with specific requirements, if needed.

1.3.3* The fire department risk management plan as described in NFPA 1500 shall include implementation of a comprehensive occupational medical program that is compliant with this standard.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, 2019 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2017 edition.

NFPA 1003, *Standard for Airport Fire Fighter Professional Qualifications*, 2019 edition.

NFPA 1006, *Standard for Technical Rescue Personnel Professional Qualifications*, 2021 edition.

NFPA 1021, *Standard for Fire Officer Professional Qualifications*, 2020 edition.

NFPA 1051, *Standard for Wildland Firefighting Personnel Professional Qualifications*, 2020 edition.

NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2021 edition.

NFPA 1561, *Standard on Emergency Services Incident Management System*, 2020 edition.

NFPA 1581, *Standard on Fire Department Infection Control Program*, 2022 edition.

NFPA 1583, *Standard on Health-Related Fitness Programs for Fire Department Members*, 2022 edition.

NFPA 1584, *Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises*, 2022 edition.

2.3 Other Publications.

▲ **2.3.1 ASA Publications.** Acoustical Society of America, 35 Pinelawn Road, Suite 114 E, Melville, NY 11747-3177.

ANSI/ASA S3.6, *Specification for Audiometers*, 2018.

▲ **2.3.2 CDC Publications.** Centers for Disease Control and Prevention, 1600 Clifton Road, Atlanta, GA 30333.

“Poliomyelitis Prevention in the United States: Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP),” *Morbidity and Mortality Weekly Report*, 49(No. RR-5):1-22, May 19, 2000.

■ **2.3.3 IAFF/IAFC Publications.** International Association of Fire Fighters, 1750 New York Avenue, Suite 300, NW, Washington, DC 20006-5395; International Association of Fire Chiefs, 4025 Fair Ridge Drive, Suite 300, Fairfax, VA 22033-2868. <http://www.iafc.org>

The Fire Service Joint Labor Management Wellness-Fitness Initiative, 4th edition, 2018.

2.3.4 US Government Publications. US Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 29, Code of Federal Regulations, Part 1910.95, “Occupational noise exposure,” 1996.

Title 29, Code of Federal Regulations, Part 1910.120, “Hazardous waste operations and emergency response,” 2002.

Title 29, Code of Federal Regulations, Part 1910.134, “Respiratory protection,” 1998.

Title 29, Code of Federal Regulations, Part 1910.1020, “Access to employee exposure and medical records,” 1996.

Title 29, Code of Federal Regulations, Part 1910.1030, “Bloodborne pathogens,” 2001.

US Dept. of Health & Human Services, National Heart, Lung and Blood Institute, *Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure* (JNC 8), 2014.

2.3.5 Other Publications.

American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*, <https://www.psychiatry.org/psychiatrists/practice/dsm>.

International Council of Ophthalmology, “International Clinical Diabetic Retinopathy Disease Severity Scale,” San Francisco, CA, October 2002, <http://www.icoph.org/standards/pdrdetail.html>.

Merriam-Webster’s Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2017 edition.

NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2021 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster’s Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Shall. Indicates a mandatory requirement.

3.2.4 Should. Indicates a recommendation or that which is advised but not required.

3.3 General Definitions.

3.3.1 Candidate. A person who has submitted an application to become a member of the fire department. [1500, 2021]

3.3.2 Category A Medical Condition. See 3.3.14.1.

3.3.3 Category B Medical Condition. See 3.3.14.2.

3.3.4 Emergency Medical Services. The provision of treatment, such as first aid, cardiopulmonary resuscitation, basic life support, advanced life support, and other pre-hospital procedures including ambulance transportation, to patients. [1500, 2021]

3.3.5 Essential Job Task. Task or assigned duty that is critical to successful performance of the job. (See Chapter 5 and Section 9.1.)

3.3.6 Evaluation. See 3.3.15, Medical Evaluation.

3.3.7* Fire Department. An organization providing rescue, fire suppression, and related activities, including any public, governmental, private, industrial, or military organization engaging in this type of activity. [1002, 2017]

3.3.8 Fire Department Physician. A licensed doctor of medicine or osteopathy who has been designated by the fire department to provide professional expertise in the areas of occupational safety and health as they relate to emergency services.

3.3.9 Functional Capacity Evaluation. An assessment of the correlation between that individual's capabilities and the essential job tasks.

3.3.10 Health and Fitness Coordinator. A person who, under the supervision of the fire department physician, has been designated by the department to coordinate and be responsible for the health and fitness programs of the department.

3.3.11 Health and Safety Committee. A representative group of individuals who serve along with the fire department physician and health and fitness coordinator, and is chaired by the fire department health and safety officer, who oversee the implementation of the fire department occupational safety and health program.

3.3.12 Health and Safety Officer. The member of the fire department assigned and authorized by the fire chief as the manager of the safety, health, and wellness program. [1500, 2021]

3.3.13 Infection Control Program. The fire department's formal policy and implementation of procedures relating to the control of infectious and communicable disease hazards where employees, patients, or the general public could be exposed to blood, body fluids, or other potentially infectious materials in the fire department work environment. [1500, 2021]

3.3.14 Medical Condition Classifications.

3.3.14.1 Category A Medical Condition. A medical condition that would preclude a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others.

3.3.14.2 Category B Medical Condition. A medical condition that, based on its severity or degree, could preclude a person from performing as a member in a training or emergency operational environment by presenting a significant risk to the safety and health of the person or others.

3.3.15 Medical Evaluation. The analysis of information for the purpose of making a determination of medical certification. Medical evaluation includes a medical examination.

3.3.16 Medical Examination. An examination performed or directed by the fire department physician.

3.3.17 Medically Certified. A determination by the fire department physician that the candidate or current member meets the medical requirements of this standard.

3.3.18* Member. A person involved in performing the duties and responsibilities of a fire department, under the auspices of the organization. [1500, 2021]

N 3.3.19* Mental Health Professional. A board-certified psychiatrist, a psychiatric nurse practitioner, clinical psychologist, clinical professional counselor, or clinical social worker that is independently licensed to evaluate, diagnose, and treat mental health disorders in their state of practice and is in good standing with their state licensure board.

3.3.20 Occupational Safety and Health Program. An occupation specific program, implemented to reduce the risks associated with the occupation, that outlines the components of a program and the roles and responsibilities of the fire department and its members.

Chapter 4 Roles and Responsibilities

4.1 Fire Department Responsibilities.

4.1.1 The fire department shall establish a comprehensive occupational medical program that includes medical evaluations for candidates and members. (*See Annex B.*)

4.1.2 The medical evaluations and any additional medical tests ordered by the fire department physician shall be provided at no cost to the members.

4.1.2.1* This obligation shall not extend to medical tests beyond the basic medical evaluation for candidates.

4.1.3* The fire department shall have an officially designated physician who shall be responsible for guiding, directing, and advising the members with regard to their health, fitness, and suitability for duty as required by NFPA 1500.

4.1.4* The fire department shall ensure that the fire department physician is a licensed doctor of medicine or osteopathy who has completed residency training in an accredited medical training program and/or is American Boards of Medical Specialties (ABMS) or American Osteopathic Association (AOA) board certified or international equivalent.

4.1.5 The fire department shall provide the fire department physician with a fire service overview, current job descriptions, and the essential job tasks required for all fire department positions and ranks.

4.1.6 The fire department shall provide the fire department physician with the department's organizational statement that outlines types and levels of services provided by the department, in accordance with NFPA 1500.

4.1.7* The types and levels of services provided by the fire department shall dictate for candidates and members the essential job tasks that pertain to its members and shall therefore be correlated to the medical requirements outlined in this standard.

4.1.8 For the purpose of conducting medical evaluations, the fire department shall assist the fire department physician to understand the physiological and psychological demands placed on members as well as the environmental conditions under which they must perform and the personal protective equipment (PPE) they must wear during various types of emergency operations.

4.1.9 The fire department shall ensure member access to evaluation by medical specialists, medical and/or surgical treatment, rehabilitation, and any other intervention prescribed by a medical provider, in consultation with the fire department physician, following an injury or illness resulting from a member's participation in fire department functions.

4.1.10 The fire department shall require that the fire department health and safety officer and the health and fitness coordinator maintain a liaison relationship with the fire department physician to ensure that all aspects of the comprehensive occupational medical program are actively engaged.

4.1.11 The fire department shall ensure employee privacy and confidentiality regarding medical conditions identified during the medical evaluation except as required by law.

4.1.12 Where possible, the fire department shall provide alternate duty position for members when the fire department physician recommends temporary work restrictions.

4.1.13 Medical Record Keeping.

4.1.13.1* The fire department comprehensive occupational medical program shall include collection and maintenance of a confidential medical and health information system for members.

4.1.13.2 All medical record keeping shall comply with the requirements of 29 CFR 1910.1020, "Access to employee exposure and medical records," and other applicable regulations and laws.

4.1.14 The provisions of 4.1.13 shall apply to all health and medical records regarding individual members and to all methods of communicating or transferring the information contained in these records, including written, oral, electronic, and any other means of communication.

4.2 Fire Department Physician Responsibilities.

4.2.1 The fire department physician shall fulfill the following responsibilities:

- (1) Understand the physiological, psychological, and environmental demands placed on firefighters
- (2) Evaluate fire department candidates and members to identify medical conditions that could affect their ability to safely respond to and participate in emergency operations
- (3) Utilize the essential job task descriptions supplied by the fire department to determine a candidate's or a member's medical certification
- (4) Identify and report the presence of Category A or disqualifying Category B medical conditions if present in candidates
- (5) Inform the fire chief or his/her designee whether or not the candidate or current member is medically certified to safely perform the essential job tasks
- (6) Report the results of the medical evaluation to the candidate or current member, including any medical condition(s) identified during the medical evaluation, and the recommendation as to whether the candidate or current member is medically certified to safely perform the essential job tasks
- (7) Forward copies of any abnormal results along with patient instructions regarding primary care follow-up to candidates or current members who were instructed to seek (as appropriate) medical follow-up to address any medical conditions, or lab abnormalities, identified during the medical evaluation
- (8) Review results of the annual occupational fitness evaluation as described in Chapter 8
- (9) Provide or arrange for a prescriptive rehabilitation and/or fitness program when indicated to aid a member's recovery from illness or injury and enhance his/her ability to safely perform essential job tasks
- (10) Participate in injury prevention and health promotion programs for firefighters

4.2.2 When medical evaluations are conducted by a physician or medical provider other than the fire department physician, the evaluation shall be reviewed and approved by the fire department physician.

4.2.3 The fire department physician shall review individual medical evaluations and aggregate data from member evaluations in order to detect evidence of occupational exposure(s) or clusters of occupational disease.

4.2.4 The fire department physician shall be a member of the Fire Department Occupational Safety and Health Committee chaired by the health and safety officer as required by NFPA 1500.

4.2.5 The fire department physician shall provide medical supervision for the fire department fitness, return-to-duty rehabilitation, and physical conditioning programs as required by NFPA 1583.

4.2.6* The fire department physician shall ensure adequate on-scene medical support at the incident scene rehabilitation sector for members during emergency operations as required by NFPA 1500; NFPA 1561; and NFPA 1584.

4.2.7 The fire department physician shall provide supervision for the fire department infection control program as required by NFPA 1581.

4.3 Candidate and Member Responsibilities. Each candidate or member shall adhere to the following requirements:

- (1) Cooperate, participate, and comply with the medical evaluation process
- (2) Provide complete and accurate information to the fire department physician and other authorized medical care provider(s)
- (3) Report any occupational exposure such as exposure to hazardous materials or toxic substances and exposure to infectious or contagious diseases
- (4) Report to the fire department physician any medical condition that could interfere with the ability of the individual to safely perform essential job tasks, such as illness or injury, use of prescription or nonprescription drugs, and pregnancy

4.4 Confidentiality of Medical Information.

4.4.1* Specific information concerning medical diagnosis shall be released by the fire department physician only with written permission from the candidate or member, and/or as required by law.

4.4.2 No fire department personnel, other than the fire department physician or appropriate medical staff, shall have access to another member's medical records without the express written consent of that member.

Chapter 5 Essential Job Tasks

5.1 Essential Job Tasks and Descriptions.

Δ 5.1.1 The fire department shall evaluate the following 14 essential job tasks against the types and levels of emergency services provided to the local community by the fire department, the types of structures and occupancies in the community, and the configuration of the fire department to determine which tasks apply to their department members and candidates:

- (1)* Wearing personal protective equipment (PPE) and self-contained breathing apparatus (SCBA) while performing firefighting tasks (e.g., hose line operations, extensive crawling, lifting and carrying heavy objects,

ventilating roofs or walls using power or hand tools, forcible entry), rescue operations, and other emergency response actions under stressful conditions, including working in extremely hot or cold environments for prolonged time periods

- (2) Wearing an SCBA, which includes a demand-valve-type positive-pressure facepiece or HEPA filter mask, which requires the ability to tolerate increased respiratory workloads
- (3) Exposure to toxic fumes, irritants, particulates, biological (i.e., infectious) and nonbiological hazards, or heated gases, despite the use of PPE and SCBA
- (4) Climbing at least six flights of stairs or walking a similarly strenuous distance and incline in jurisdictions without tall buildings while wearing PPE and SCBA, commonly weighing 40–50 lb (18–23 kg) and carrying equipment/tools weighing an additional 20–40 lb (9–18 kg)
- (5) Wearing PPE and SCBA that is encapsulating and insulated, which will result in significant fluid loss that frequently progresses to clinical dehydration and can elevate core temperature to levels exceeding 102.2°F (39°C)
- (6) Working alone while wearing PPE and SCBA, searching, finding, and rescue-dragging or carrying victims ranging from newborns to adults weighing over 165 lb (75 kg) to safety despite hazardous conditions and low visibility
- (7) While wearing PPE and SCBA, advancing water-filled hose lines up to 1 ¼ in. (45 mm) in diameter from fire apparatus to occupancy [approximately 150 ft (50 m)], which can involve negotiating multiple flights of stairs, ladders, and other obstacles
- (8) While wearing PPE and SCBA, climbing ladders, operating from heights, walking or crawling in the dark along narrow and uneven surfaces that might be wet or icy, and operating in proximity to electrical power lines or other hazards
- (9) Unpredictable, prolonged periods of extreme physical exertion as required by emergency operations without benefit of a warm-up period, scheduled rest periods, meals, access to medication(s), or hydration
- (10) Operating fire apparatus or other vehicles in an emergency mode with emergency lights and sirens
- (11) Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments, including hot, dark, tightly enclosed spaces, that is further aggravated by fatigue, flashing lights, sirens, and other distractions
- (12) Ability to communicate (i.e., give and comprehend verbal orders) while wearing PPE and SCBA under conditions of high background noise, poor visibility, and drenching from hose lines or fixed protection systems (e.g., sprinklers)
- (13) Functioning as an integral component of a team, where sudden incapacitation of a member can result in mission failure or in risk of injury or death to members of the public or other team members
- (14) Working in shifts, including during nighttime, that can extend beyond 12 hours

5.1.2 The fire department shall provide the fire department physician with the list of essential job tasks, as developed per 5.1.1, to be used in the medical evaluation of members and candidates.

5.1.3 The fire department physician shall consider the physical, physiological, intellectual, and psychological demands of the occupation when evaluating the candidate's or member's ability to perform the essential job tasks.

5.2 Essential Job Tasks for Specialized Teams.

5.2.1 If the fire department operates specialized teams such as hazardous materials units, self-contained underwater breathing apparatus (SCUBA) teams, technical rescue teams, emergency medical services (EMS) teams, or units supporting tactical law enforcement operations, the fire department shall identify for each team it operates the additional essential job tasks and specialized personal protective equipment (PPE) not specified in 5.1.1(1) through 5.1.1(13) that would apply to the members of that team.

5.2.2 The fire department shall also provide the fire department physician with the list of additional essential job tasks and specialized PPE specific to each specialized team.

5.2.3 When performing the medical evaluation of members of a specialized team, the fire department physician shall also consider the following:

- (1) Additional medical and/or physical requirements that are related to the job tasks being performed by the team that are not enumerated in this standard
- (2) The impact on members of having to wear or utilize specialized PPE that can increase weight, environmental isolation, sensory deprivation, and/or dehydration potential above levels experienced with standard fire suppression PPE

Chapter 6 Medical Evaluations of Candidates

6.1 Medical Evaluation. An individualized medical evaluation of a candidate shall be conducted prior to the candidate being placed in training programs or fire department emergency response activities.

▲ **6.1.1*** The medical evaluation of a candidate shall include a medical history, examination, and any laboratory tests required to detect physical or medical condition(s) that could adversely affect his or her ability to perform the essential job tasks outlined in 5.1.1.

▲ **6.1.2*** This standard shall provide specific requirements for candidates based on medical conditions that can affect a candidate's ability to perform the essential job tasks of a firefighter.

6.2 Medical Conditions Affecting Ability to Perform Essential Job Tasks.

▲ **6.2.1** Medical conditions that can affect a candidate's ability to perform essential job tasks shall be designated either Category A or Category B.

6.2.2 Candidates with Category A medical conditions shall not be certified as meeting the medical requirements of this standard.

6.2.3 Candidates with Category B medical conditions shall be certified as meeting the medical requirements of this standard only if they can perform the essential job tasks without posing a significant safety and health risk to themselves, members, or the public.

6.3 Head and Neck.

6.3.1 Head.

▲ 6.3.1.1 Category A medical conditions shall include the following:

- (1) Defect of skull preventing helmet use or leaving underlying brain unprotected from trauma
- (2) Any skull or facial deformity that would not allow for a successful fit test for respirators used by that department
- (3) Any head condition that results in the candidate not being able to perform one or more of the essential job tasks

6.3.1.2 Category B medical conditions shall include the following:

- (1)* Deformities of the skull such as depressions or exostoses
- (2)* Deformities of the skull associated with evidence of disease of the brain, spinal cord, or peripheral nerves
- (3)* Loss or congenital absence of the bony substance of the skull

6.3.2 Neck.

▲ 6.3.2.1 Category A medical conditions shall include any neck condition that results in the candidate not being able to perform one or more of the essential job tasks.

6.3.2.2 Category B medical conditions shall include the following:

- (1)* Thoracic outlet syndrome
- (2)* Congenital cysts, chronic draining fistulas, or similar lesions
- (3)* Contraction of neck muscles

6.3.3 Eyes and Vision.

▲ 6.3.3.1 Category A medical conditions shall include the following:

- (1)* Far visual acuity worse than 20/40 binocular, corrected with contact lenses or spectacles, or far visual acuity worse than 20/100 binocular for wearers of hard contacts or spectacles, or new soft contact lens wearers, uncorrected
- (2)* Color perception — monochromatic vision resulting in inability to use imaging devices, such as thermal imaging cameras
- (3) Far visual acuity worse than 20/100 in the worse eye, corrected or uncorrected
- (4)* Monocular vision, stereopsis without fusional capacity, night blindness, or loss of peripheral vision (i.e., horizontal field of vision less than 110 degrees in each eye)
- (5) Peripheral vision in the horizontal meridian of less than 110 degrees in the better eye or any condition that significantly affects peripheral vision in *both* eyes
- (6) Any eye condition that results in the candidate not being able to perform one or more of the essential job tasks
- (7) Near visual acuity less than 20/40 binocular, uncorrected or corrected

▲ 6.3.3.2 Category B medical conditions shall include the following:

- (1)* Diseases of the eye, such as retinal detachment, progressive retinopathy, or optic neuritis
- (2)* Ophthalmological procedures, such as radial keratotomy, Lasik procedure, or repair of retinal detachment

- (3) Peripheral vision in the horizontal meridian of less than 110 degrees in the better eye or any condition that affects peripheral vision in *both* eyes
- (4) Amblyopia

6.3.4* Ears and Hearing.

▲ 6.3.4.1 Category A medical conditions shall include the following:

- (1) Chronic vertigo or impaired balance as demonstrated by the inability to tandem gait walk
- (2) On audiometric testing, without the aid of a hearing assistance device, average hearing loss in the unaided better ear worse than 40 decibels (dB) at 500 Hz, 1000 Hz, 2000 Hz, and 3000 Hz when the audiometric device is calibrated to ANSI/ASA S3.6, *Specification for Audiometers*
- (3) Any ear condition or hearing impairment that results in the candidate not being able to perform one or more of the essential job tasks

6.3.4.2 Category B medical conditions shall include the following:

- (1)* Unequal hearing loss
- (2) Average uncorrected hearing deficit at the test frequencies 500 Hz, 1000 Hz, 2000 Hz, and 3000 Hz worse than 40 dB in either ear
- (3) Atresia, stenosis, or tumor of the auditory canal
- (4)* External otitis, recurrent
- (5)* Agnesis or traumatic deformity of the auricle
- (6)* Mastoiditis or surgical deformity of the mastoid
- (7)* Ménière's disease, labyrinthitis, or tinnitus
- (8)* Otitis media, recurrent
- (9) Surgical procedures to correct or improve hearing or other conditions of the ear

6.3.5 Dental.

▲ 6.3.5.1 Category A medical conditions shall include any dental condition that results in inability to perform one or more of the essential job tasks.

6.3.5.2 Category B medical conditions shall include the following:

- (1)* Diseases of the jaws or associated tissues
- (2)* Orthodontic appliances
- (3)* Oral tissues, extensive loss
- (4)* Relationship between the mandible and maxilla that interferes with satisfactory postorthodontic replacement or ability to use protective equipment

6.3.6 Nose, Oropharynx, Trachea, Esophagus, and Larynx.

▲ 6.3.6.1 Category A medical conditions shall include the following:

- (1)* Tracheostomy
- (2)* Aphonia
- (3) Any nasal, oropharyngeal, tracheal, esophageal, or laryngeal condition that results in inability to perform one or more of the essential job tasks, including fit testing for respirators used by the fire department and SCBA for fire and hazmat operations

6.3.6.2 Category B medical conditions shall include the following:

- (1)* Congenital or acquired deformity
- (2)* Allergic rhinitis

- (3) Epistaxis, recurrent
- (4)* Sinusitis, recurrent
- (5)* Dysphonia
- (6) Anosmia
- (7) Tracheal stenosis
- (8) Nasopharyngeal polypsis
- (9)* Obstructive apneas (e.g., sleep apnea) if unresponsive to treatment

6.4 Lungs and Chest Wall.

▲ 6.4.1 Category A medical conditions shall include the following:

- (1) Active hemoptysis
- (2) Current empyema
- (3) Pulmonary hypertension
- (4) Active tuberculosis
- (5)* A forced vital capacity (FVC) or forced expiratory volume in 1 second (FEV₁) less than 70 percent predicted even independent of disease
- (6)* Obstructive lung diseases (e.g., emphysema, chronic bronchitis, asthma) with an absolute FEV₁/FVC less than 0.70 and FEV₁ below 0.80 (see references in Section F.2)
- (7)* Hypoxemia oxygen saturation less than 90 percent at rest or exercise desaturation by 4 percent or to less than 90 percent exercise testing indicated when resting oxygen is less than 94 percent but greater than 90 percent
- (8)* Asthma, including reactive airways disease requiring bronchodilator or corticosteroid therapy at least once in the previous 2 years, unless the candidate can meet the requirement in 6.4.1.1
- (9) Any pulmonary condition that results in the candidate not being able to perform one or more of the essential job tasks
- (10) Lung transplant
- (11) Obstructive sleep apnea with excessive daytime sleepiness, unless all the following criteria are met:
 - (a) Successful treatment
 - (b) Documentation of compliance with CPAP, for sleep study with an oral appliance, or of sleep study after surgery
 - (c) No excessive daytime sleepiness with treatment

▲ 6.4.1.1* A candidate who has been diagnosed with asthma or has in the past required bronchodilator, corticosteroid, or anti-inflammatory therapy (e.g., a leukotriene receptor antagonist, such as montelukast) shall be evaluated by a pulmonologist or other expert in asthmatic lung diseases, such as an allergist, to determine if the candidate meets all the following:

- (1) The applicant denies bronchospasm during exertion, temperature/humidity extremes, or irritant exposures.
- (2) The applicant denies the use of bronchodilator rescue medications during exertion, temperature/humidity extremes, or irritant exposures.
- (3) The applicant's asthma has not required systemic corticosteroids, emergency room treatment, or hospital admission in the past 2 years.
- (4) Allergen avoidance or desensitization has been successful.
- (5) Spirometry demonstrates FVC and FEV₁ greater than or equal to 90 percent and no bronchodilator response measured off all bronchodilators on the day of testing.
- (6) Normal or negative response to provocative challenge testing [e.g., cold air, exercise (12 METs), methacholine (PC₂₀ greater than 8 is considered normal because

response at dose greater than 8 mg/ml might not be clinically significant), histamine, mannitol, or hypertonic saline] or negative response to exercise challenge (see 6.4.1.2).

6.4.1.2 Challenge testing shall be performed off all anti-inflammatory medications (e.g., inhaled or oral steroids, leukotriene receptor antagonists) for 4 weeks preceding the test, off all antihistamines (e.g., oral allergy medications) for 1 week, and off all bronchodilators on the day of testing.

6.4.2 Category B medical conditions shall include the following:

- (1)* Pulmonary resection surgery, chest wall surgery, and pneumothorax
- (2) Pleural effusion
- (3)* Fibrothorax, chest wall deformity, and diaphragm abnormalities
- (4)* Interstitial lung diseases
- (5)* Pulmonary vascular diseases or history of pulmonary embolism
- (6)* Bronchiectasis, if abnormal pulmonary function or recurrent infections
- (7) Infectious diseases of the lung or pleural space
- (8) Cystic fibrosis
- (9) Central apnea

6.5 Heart and Vascular System.

6.5.1 Heart.

▲ 6.5.1.1 Category A medical conditions shall include the following:

- (1)* Clinically significant coronary artery disease, including history of myocardial infarction, angina pectoris, coronary artery bypass surgery, coronary angioplasty, and similar procedures
- (2)* Cardiomyopathy or congestive heart failure, including signs or symptoms of compromised left or right ventricular function or rhythm, including dyspnea, S3 gallop, peripheral edema, enlarged ventricle, abnormal ejection fraction, or inability to increase cardiac output with exercise
- (3)* Acute pericarditis, endocarditis, or myocarditis
- (4)* Syncope, recurrent
- (5)* Any medical condition requiring an automatic implantable cardiac defibrillator, unless the condition no longer requires an automatic implantable cardiac defibrillator, or a medical history of ventricular tachycardia or ventricular fibrillation due to ischemic or valvular heart disease, or cardiomyopathy
- (6) Third-degree atrioventricular block
- (7)* Cardiac pacemaker, if the applicant is pacemaker-dependent
- (8) Hypertrophic cardiomyopathy, including idiopathic hypertrophic subaortic stenosis
- (9) Any cardiac condition that results in the candidate not being able to perform one or more of the essential job tasks
- (10) Heart transplant

6.5.1.2 Category B medical conditions shall include the following:

- (1)* Valvular lesions of the heart, including prosthetic valves
- (2)* Recurrent supraventricular or atrial tachycardia, flutter, or fibrillation

- (3)* Left bundle branch block
- (4) Second-degree atrioventricular block in the absence of structural heart disease
- (5) Sinus pause of more than 3 seconds
- (6)* Ventricular arrhythmia (i.e., history or presence of multifocal PVCs or nonsustained ventricular tachycardia on resting EKG with or without symptoms; history or presence of sustained ventricular tachycardia with or without symptoms)
- (7)* Cardiac hypertrophy
- (8)* History of a congenital abnormality
- (9)* Chronic pericarditis, endocarditis, or myocarditis
- (10) Brugada syndrome
- (11) Long QT syndrome
- (12) Arrhythmogenic right ventricular cardiomyopathy
- (13) Cardiac pacemaker, if the applicant is not pacemaker-dependent
- (14) Coronary artery disease, if not covered by 6.5.1.1

6.5.2 Vascular System.

▲ 6.5.2.1 Category A medical conditions shall include the following:

- (1) Hypertension
 - (a)* Uncontrolled or poorly controlled hypertension
 - (b)* Hypertension with evidence of end organ damage
- (2)* Thoracic or abdominal aortic aneurysm
- (3) Carotid artery stenosis or obstruction resulting in greater than or equal to 50 percent reduction in blood flow
- (4)* Peripheral vascular disease resulting in symptomatic claudication
- (5) Any other vascular condition that results in inability to perform one or more of the essential job tasks

6.5.2.2 Category B medical conditions shall include the following:

- (1) Vasospastic phenomena such as Raynaud's phenomenon
- (2)* Thrombophlebitis, thrombosis, or varicosities
- (3)* Chronic lymphedema due to lymphadenopathy or venous valvular incompetency
- (4)* Congenital or acquired lesions of the aorta or major vessels
- (5)* Circulatory instability as indicated by orthostatic hypotension, persistent tachycardia, and peripheral vasomotor disturbances
- (6) History of surgical repair of aneurysm of the heart or major vessel

6.5.3 Metabolic Syndrome.

6.5.3.1* Category A medical conditions shall include metabolic syndrome with aerobic capacity less than 12 METs.

6.5.3.2 Category B medical conditions shall include metabolic syndrome with aerobic capacity 12 METs or greater.

6.5.4* **Aerobic Capacity.** Category A medical conditions shall include an aerobic capacity less than 12 metabolic equivalents (METs).

6.6 Endocrine and Metabolic Disorders.

▲ 6.6.1 Category A medical conditions shall include the following:

- (1)* Type 1 diabetes mellitus, unless a candidate meets all of the following criteria:

- (a) Is maintained by a physician knowledgeable in current management of diabetes mellitus on a basal/bolus regimen, which can include a subcutaneous insulin infusion pump, using insulin analogs.
 - (b)* Has demonstrated over a period of at least 6 months the motivation and understanding required to monitor and control capillary blood glucose levels through nutritional therapy and insulin administration.
 - (c) Has a dilated retinal exam by a qualified ophthalmologist or optometrist that shows no higher grade of diabetic retinopathy than microaneurysms, as indicated on the international clinical diabetic retinopathy disease severity scale.
 - (d)* Has normal renal function based on a calculated creatinine clearance greater than 60 mL/min and absence of proteinuria.
 - (e)* Has no autonomic or peripheral neuropathy.
 - (f) Has normal cardiac function without evidence of myocardial ischemia on cardiac stress testing—to at least 12 MET—by ECG and cardiac imaging.
 - (g) Has a signed statement and medical records from an endocrinologist or a physician with demonstrated knowledge in the current management of diabetes mellitus as well as knowledge of the essential job tasks and hazards of firefighting as described in 5.1.1, allowing the fire department physician to determine whether the candidate meets the following criteria:
 - i. Is being successfully maintained on a regimen consistent with 6.6.1(1)(a) and 6.6.1(1)(b).
 - ii.* Has had hemoglobin A1C measured at least four times a year (at intervals of 2 to 3 months) over the last 12 months prior to evaluation if the diagnosis of diabetes has been present over 1 year.
 - iii. Does not have an increased risk of hypoglycemia due to alcohol use or other predisposing factors.
 - iv.* Has had no episodes of severe hypoglycemia (i.e., requiring assistance of another) in the preceding year, with no more than two episodes of severe hypoglycemia in the preceding 3 years.
 - v. Is certified not to have a medical contraindication to firefighting training and operations.
- (2) Insulin-requiring Type 2 diabetes mellitus, unless a candidate meets all of the following criteria:
- (a) Is maintained by a physician knowledgeable in current management of diabetes mellitus.
 - (b)* Has demonstrated over a period of at least 3 months the motivation and understanding required to closely monitor and control capillary blood glucose levels through nutritional therapy and insulin administration.
 - (c) Has a dilated retinal exam by a qualified ophthalmologist or optometrist that shows no higher grade of diabetic retinopathy than microaneurysms, as indicated on the international clinical diabetic retinopathy disease severity scale.
 - (d)* Has normal renal function based on a calculated creatinine clearance greater than 60 mL/min and absence of proteinuria.
 - (e)* Has no autonomic or peripheral neuropathy.

- (f) Has normal cardiac function without evidence of myocardial ischemia on cardiac stress testing—to at least 12 METs—by ECG and cardiac imaging.
- (g) Has a signed statement and medical records from an endocrinologist or a physician with demonstrated knowledge in the current management of diabetes mellitus as well as knowledge of the essential job tasks and hazards of firefighting as described in 5.1.1, allowing the fire department physician to determine whether the candidate meets the following criteria:
 - i. Is maintained on a stable insulin regimen and has demonstrated over a period of at least 3 months the motivation and understanding required to monitor and control capillary blood glucose levels despite varied activity schedules through nutritional therapy and insulin administration.
 - ii. Has had hemoglobin A1C measured at least four times a year (at intervals of 2 to 3 months) over the last 12 months prior to evaluation if the diagnosis of diabetes has been present over 1 year and where a hemoglobin A1C reading of 8 percent or greater triggered a medical evaluation, including evidence of a set schedule for blood glucose monitoring and a thorough review of data from such monitoring, to determine if a condition existed in addition to diabetes that was responsible for the hemoglobin A1C not accurately reflecting average glucose levels.
 - iii. Does not have an increased risk of hypoglycemia due to alcohol use or other predisposing factors.
 - iv.* Has had no episodes of severe hypoglycemia (i.e., requiring assistance of another) in the preceding year, with no more than two episodes of severe hypoglycemia in the preceding 3 years.
 - v. Is certified not to have a medical contraindication to firefighting training and operations.
- (3) Any endocrine or metabolic condition that results in the candidate not being able to perform one or more of the essential job tasks

▲ 6.6.2 Category B medical conditions shall include the following:

- (1)* Diseases of the adrenal gland, pituitary gland, parathyroid gland, or thyroid gland of clinical significance
- (2) Nutritional deficiency diseases or other metabolic disorder
- (3) Diabetes mellitus, not on insulin therapy, but controlled by diet, exercise, or oral hypoglycemic agents unless all of the following are met:
 - (a) Has had hemoglobin A1C measured at least four times a year (at intervals of 2 to 3 months) over the last 12 months prior to evaluation if the diagnosis of diabetes has been present over 1 year and where a hemoglobin A1C reading of 8 percent or greater triggered a medical evaluation, including evidence of a set schedule for blood glucose monitoring and a thorough review of data from such monitoring, to determine if a condition existed in addition to

- diabetes that was responsible for the hemoglobin A1C not accurately reflecting average glucose levels.
- (b) If on oral hypoglycemic agents, has had no episodes of severe hypoglycemia (i.e., requiring assistance of another) in the preceding year.
- (c) Has a dilated retinal exam by a qualified ophthalmologist or optometrist that shows no higher grade of diabetic retinopathy than microaneurysms, as indicated on the international clinical diabetic retinopathy disease severity scale.
- (d)* Has normal renal function based on a calculated creatinine clearance greater than 60 mL/min and absence of proteinuria.
- (e)* Has no autonomic or peripheral neuropathy.
- (f) Normal cardiac function without evidence of myocardial ischemia on cardiac stress testing—to at least 12 METs—by ECG and cardiac imaging.

6.7 Abdominal Organs and Gastrointestinal System.

▲ 6.7.1 Category A medical conditions shall include the following:

- (1) Presence of uncorrected inguinal/femoral hernia, if symptomatic
- (2) Any gastrointestinal condition that results in the candidate not being able to perform one or more of the essential job tasks

6.7.2 Category B medical conditions shall include the following:

- (1)* Cholecystitis
- (2)* Gastritis
- (3)* GI bleeding
- (4)* Acute hepatitis
- (5) Hernia, including the following:
 - (a) Uncorrected umbilical, ventral, or incisional hernia if significant risk exists for infection or strangulation
 - (b) Significant symptomatic hiatal hernia if associated with asthma, recurrent pneumonia, chronic pain, or chronic ulcers
 - (c)* Surgically corrected hernia more than 3 months after surgical correction
- (6)* Inflammatory bowel disease or irritable bowel syndrome
- (7)* Intestinal obstruction
- (8)* Pancreatitis
- (9) Diverticulitis
- (10)* History of gastrointestinal surgery
- (11)* Peptic or duodenal ulcer or Zollinger-Ellison syndrome
- (12)* Asplenia
- (13)* Cirrhosis, hepatic or biliary
- (14)* Chronic active hepatitis

6.8 Spine and Axial Skeleton.

▲ 6.8.1 Category A medical conditions shall include the following:

- (1) Scoliosis of thoracic or lumbar spine with angle greater than or equal to 40 degrees
- (2) Any spinal or skeletal condition producing sensory or motor deficit(s) or pain due to radiculopathy or nerve compression
- (3) Any spinal or skeletal condition causing pain that frequently or recurrently requires narcotic analgesic medication

- (4) Cervical vertebral fractures with multiple vertebral body compression greater than 25 percent; evidence of posterior element involvement, nerve root damage, disc involvement, dislocation (i.e., partial, moderate, severe), abnormal exam, ligament instability, symptomatic, or less than 6 months post injury or less than 1 year since surgery
- (5) Thoracic vertebral fractures with vertebral body compression greater than 50 percent; evidence of posterior element involvement, nerve root damage, disc involvement, dislocation (e.g., severe — with or without surgery), abnormal exam, ligament instability, symptomatic, or less than 6 months post injury or less than 1 year since surgery
- (6) Lumbosacral vertebral fractures with vertebral body compression greater than 50 percent; evidence of posterior element involvement, nerve root damage, disc involvement, dislocation (i.e., partial, moderate, severe), fragmentation, abnormal exam, ligament instability, symptomatic, or less than 6 months post injury or less than 1 year since surgery
- (7) History of spine surgery or injury that results in the candidate not being able to perform one or more of the essential job tasks

6.8.2 Category B medical conditions shall include the following:

- (1) Congenital or developmental malformations of the back, particularly those that can cause instability, neurological deficits, pain, or limit flexibility
- (2) Scoliosis with angle less than 40 degrees
- (3) Arthritis of the cervical, thoracic, or lumbosacral spine
- (4) Facet tropism, high lumbosacral angle, hyperlordosis, Schmorl's nodes, Scheuermann's disease, spina bifida occulta, spondylolisthesis, spondylolysis, or transitional vertebrae
- (5) History of infections or infarcts in the spinal cord, epidural space, vertebrae, or axial skeletal joints
- (6) History of discectomy or laminectomy or vertebral fractures

6.9 Extremities.

6.9.1 Category A medical conditions shall include the following:

- (1) Joint replacement, unless all of the following conditions are met:
 - (a) Normal range of motion without history of dislocations post-replacement
 - (b) Repetitive and prolonged pulling, bending, rotations, kneeling, crawling, and climbing without pain or impairment
 - (c) No limiting pain
 - (d) Evaluation by an orthopedic specialist who concurs that the candidate can complete all essential job tasks listed in Chapter 5
- (2) Amputation or congenital absence of upper-extremity limb (i.e., hand or higher)
- (3) Amputation of either thumb proximal to the mid-proximal phalanx
- (4) Amputation or congenital absence of lower-extremity limb (i.e., foot or above) unless the candidate meets all of the following conditions:

- (a) Stable, unilateral below-the-knee (BKA) amputation with at least the proximal third of the tibia present for a strong and stable attachment point with the prosthesis
 - (b) Fitted with a prosthesis that will tolerate the conditions present in firefighting when worn in conjunction with standard firefighting PPE
 - (c) At least 6 months of prosthetic use in a variety of activities with no functional difficulties
 - (d) Amputee limb healed with no significant inflammation, persistent pain, necrosis, or indications of instability at the amputee limb attachment point
 - (e) No significant psychosocial issues pertaining to the loss of limb or use of prosthesis
 - (f) Evaluated by a prosthetist or orthopedic specialist with expertise in the fitting and function of prosthetic limbs who concurs that the candidate can complete all essential job tasks listed in Chapter 5, including wearing PPE and SCBA while climbing ladders, operating from heights, and walking or crawling in the dark along narrow and uneven surfaces that may be wet or icy
 - (g) Has passed the department's applicant physical ability test as a condition of appointment without accommodations or modification of the protocol
- (5) Chronic nonhealing or recent bone grafts
 - (6) History of more than one dislocation of shoulder without surgical repair or with history of recurrent shoulder disorders within the last 5 years with pain or loss of motion, and with or without radiographic deviations from normal
 - (7) Any extremity condition that results in the candidate not being able to perform one or more of the essential job tasks

6.9.2 Category B medical conditions shall include the following:

- (1)* History of shoulder dislocation with surgical repair
- (2) Significant limitation of function of shoulder, elbow, wrist, hand, or finger due to weakness, reduced range of motion, atrophy, unequal length, absence, or partial amputation
- (3) Significant lack of full function of hip, knee, ankle, foot, or toes due to weakness, reduced range of motion, atrophy, unequal length, absence, or partial amputation
- (4)* History of meniscectomy or ligamentous repair of knee
- (5)* History of intra-articular, malunited, or nonunion of upper or lower extremity fracture
- (6)* History of osteomyelitis, septic, or rheumatoid arthritis
- (7) Bone hardware such as metal plates or rods supporting bone during healing

6.10 Neurological Disorders.

6.10.1 Category A medical conditions shall include the following:

- (1) All epileptic conditions, including simple partial, complex partial, generalized, and psychomotor unless all of the following conditions are met:
 - (a) No seizures for the most recent consecutive 10 years
 - (b) Currently on a stable regimen of antiepileptic drugs (AED) for the most recent 5 years with no side effects impacting the performance of the 14 essential job tasks or no AED for the most recent 5 years

- (c) Normal neurological examination results
- (d) A definitive statement from a qualified neurological specialist that the candidate meets the criteria specified in 6.10.1(1) and is neurologically cleared for firefighting training and meets the performance of the 14 essential job tasks
- (2) All single unprovoked seizures (e.g., simple partial, complex partial, generalized, and psychomotor) unless all of the following conditions are met:
 - (a) No seizures for the most recent consecutive 5 years
 - (b) On a stable regimen of antiepileptic drugs (AED) for the most recent 5 years with no side effects impacting the performance of the 14 essential job tasks, or no AED for the most recent 5 years
 - (c) Normal neurologic exam
 - (d) Normal brain MRI results—if abnormal, see 6.10.1(1)
 - (e) Normal awake and asleep photic stimulation and hyperventilation EEG study results—if abnormal, see 6.10.1(1)
 - (f) A definitive statement from a qualified neurological specialist that the candidate meets the criteria specified in 6.10.1(2) and is neurologically cleared for firefighting training and meets the performance of the 14 essential job tasks
- (3) All single acute symptomatic seizures with a high rate of recurrence [e.g., head trauma, infection (encephalitis, meningitis), brain lesion (stroke, tumor), brain surgery] should be managed as specified in 6.10.1(2)
- (4) Ataxias of heredo-degenerative type
- (5) Cerebral arteriosclerosis as evidenced by a history of transient ischemic attack, reversible ischemic neurological deficit, or ischemic stroke
- (6) Hemiparalysis or paralysis of a limb
- (7)* Multiple sclerosis with activity or evidence of progression within the previous 3 years
- (8)* Myasthenia gravis with activity or evidence of progression within the previous 3 years
- (9) Progressive muscular dystrophy or atrophy
- (10) Uncorrected cerebral aneurysm
- (11) Dementia (e.g., Alzheimer's and other neurodegenerative diseases) with symptomatic loss of function or cognitive impairment (e.g., less than or equal to 28 on Mini-Mental Status Exam)
- (12) Parkinson's disease and other movement disorders resulting in uncontrolled movements, bradykinesia, or cognitive impairment (e.g., less than or equal to 28 on Mini-Mental Status Exam)
- (13) Narcolepsy with cataplexy
- (14) Narcolepsy with persistent excessive daytime sleepiness despite medical treatment
- (15) Amyotrophic lateral sclerosis (ALS)
- (16) Any neurological condition that results in the candidate not being able to perform one or more of the essential job tasks

▲ 6.10.2 Category B medical conditions shall include the following:

- (1) Congenital malformations
- (2)* Migraine
- (3) Clinical disorders with paresis, dyscoordination, deformity, abnormal motor activity, abnormality of sensation, or complaint of pain

- (4) History of subarachnoid or intraparenchymal hemorrhage
- (5) Abnormalities from recent head injury such as severe cerebral contusion or concussion
- (6)* Provoked seizure with a low risk of recurrence [e.g., medications, toxin exposures, metabolic abnormalities, withdrawal (alcohol or benzos), drugs (cocaine, amphetamines, PCP)], and no underlying seizure risk or status epilepticus

6.11 Chemicals, Drugs, and Medications.

▲ 6.11.1 Category A medical conditions shall include those that require chronic or frequent treatment with any of the following medications or classes of medications:

- (1) Narcotics, including methadone
- (2) Sedative-hypnotics
- (3)* Full-dose or low-dose anticoagulation medications or any drugs that prolong prothrombin time (PT), partial thromboplastin time (PTT), or international normalized ratio (INR)
- (4) Beta-adrenergic blocking agents at doses that prevent a normal cardiac rate response to exercise, high-dose diuretics, or central acting antihypertensive agents (e.g., clonidine)
- (5)* Respiratory medications: inhaled bronchodilators, inhaled corticosteroids, systemic corticosteroids, theophylline, and leukotriene receptor antagonists (e.g., montelukast)
- (6) High-dose corticosteroids for chronic disease
- (7) Anabolic steroids
- (8) Any chemical, drug, or medication that results in the candidate not being able to perform one or more of the essential job tasks

▲ 6.11.1.1 Tobacco use shall be a Category A medical condition where allowed by law.

6.11.1.2 Evidence of illegal drug use detected through testing, conducted in accordance with Substance Abuse and Mental Health Service Administration (SAMHSA), shall be a Category A medical condition.

6.11.1.3 Evidence of clinical intoxication or a measured blood alcohol level that exceeds the legal definition of intoxication according to the AHJ at the time of medical evaluation shall be a Category A medical condition.

6.11.2* Category B medical conditions shall include the use of the following:

- (1) Cardiovascular agents
- (2) Stimulants
- (3) Psychiatric medications
- (4) Other than high-dose systemic corticosteroids
- (5) Antihistamines
- (6) Muscle relaxants
- (7) Leukotriene receptor antagonists (e.g., montelukast) used for allergies that do not affect the lower respiratory system

6.12 Reproductive System. See B.1.2.1.

▲ 6.12.1 Category A medical conditions shall include any genital condition that results in inability to perform one or more of the essential job tasks.

6.12.2 Category B medical conditions shall include the following:

- (1)* Pregnancy, for its duration
- (2) Dysmenorrhea
- (3) Endometriosis, ovarian cysts, or other gynecologic conditions
- (4) Testicular or epididymal mass

6.13 Systemic Diseases and Miscellaneous Conditions.

Δ 6.13.1 Category A medical conditions shall include any systemic condition that results in the candidate not being able to perform one or more of the essential job tasks.

6.13.2 Category B medical conditions shall include the following:

- (1) Connective tissue disease, such as dermatomyositis, systemic lupus erythematosus, scleroderma, and rheumatoid arthritis
- (2)* History of thermal, chemical, or electrical burn injury with residual functional deficit
- (3) Documented evidence of a predisposition to or history of heat illness, rhabdomyolysis, metabolic acidosis, or exertion-related incapacitation

6.14 Urinary System.

Δ 6.14.1 Category A medical conditions shall include the following:

- (1) Renal failure or insufficiency requiring continuous ambulatory peritoneal dialysis (CAPD) or hemodialysis
- (2) Any urinary condition that results in the candidate not being able to perform one or more of the essential job tasks
- (3) Chronic kidney disease of Stage 4 or greater [glomerular filtration rate (GFR) < 30 ml/min/1.73m²]

6.14.2 Category B medical conditions shall include the following:

- (1) Diseases of the kidney
- (2) Diseases of the ureter, bladder, or prostate

N 6.15 Infectious Diseases.

N 6.15.1 Category A medical conditions shall include any infectious or post-infectious condition that results in the candidate not being able to perform one or more of the essential job tasks.

N 6.15.2 Category B medical conditions shall include the following:

- (1) Infections that interfere with control of body temperature, hydration, or nutritional status
- (2) Infections that produce severe pain or muscle weakness, compromise mobility, or affect ability to perform heavy physical exertion

N 6.15.3 Category B medical considerations shall include the following:

- (1) Candidate shall be able to interact with other firefighters and the general public without posing a public health risk due to contagious disease.
- (2) Following resolution of acute or self-limited infectious processes, candidates shall be able to undertake duties.

6.16 Skin.

Δ 6.16.1 Category A medical conditions shall include the following:

- (1) Metastatic or locally extensive basal or squamous cell carcinoma or melanoma
- (2) Any dermatologic condition that would not allow for a successful fit test for any respirator required by the fire department
- (3) Any dermatologic condition that results in the candidate not being able to perform one or more of the essential job tasks

6.16.2 Category B medical conditions shall include the following:

- (1)* Skin conditions of a chronic or recurrent nature (e.g., eczema, cystic acne, psoriasis) that cause skin openings or inflammation or irritation of the skin surface
- (2)* Surgery or skin grafting
- (3)* Mycosis fungoides
- (4)* Cutaneous lupus erythematosus
- (5)* Raynaud's phenomenon
- (6)* Scleroderma (skin)
- (7)* Vasculitic skin lesions
- (8)* Atopic dermatitis/eczema
- (9)* Contact or seborrheic dermatitis
- (10)* Stasis dermatitis
- (11)* Albinism, Darier's disease, ichthyosis, Marfan syndrome, neurofibromatosis, and other genetic conditions
- (12)* Folliculitis, pseudo-folliculitis, miliaria, keloid folliculitis
- (13)* Hidradenitis suppurativa, furuncles, carbuncles, or Grade IV acne (cystic)
- (14)* Mechano-bullous disorders (e.g., epidermolysis bullosa, Hailey pemphigus, porphyria, pemphigoid)
- (15)* Urticaria or angioedema

6.17 Blood and Blood-Forming Organs.

Δ 6.17.1 Category A medical conditions shall include the following:

- (1) Hemorrhagic states requiring replacement therapy
- (2) Sickle cell disease (i.e., homozygous)
- (3) Clotting disorders
- (4) Any hematological condition that results in inability to perform one or more of the essential job tasks

Δ 6.17.2 Category B medical conditions shall include the following:

- (1) Anemia
- (2) Leukopenia
- (3) Polycythemia vera
- (4) Splenomegaly
- (5) History of thromboembolic disease
- (6) Any other hematological condition that results in inability to perform essential job tasks

N 6.18 Heat Stress and Illness.

N 6.18.1 Category A medical conditions shall include any heat-related illness that results in the candidate not being able to perform one or more of the essential job tasks.

N 6.18.2 Category B medical conditions shall include the following:

- (1) Documented evidence of a predisposition to or history of heat illness, rhabdomyolysis, metabolic acidosis, or exertion-related incapacitation
- (2) Presence of neurologic (e.g., myasthenia gravis, multiple sclerosis) or other condition that is exacerbated by heat stress
- (3) Requirement for medications (e.g., MAOIs, phenothiazines, anticholinergics, tricyclic antidepressants) that increase an individual's risk of heat stress
- (4) Heat exposure restrictions imposed during pregnancy

6.19 Tumors and Malignant Diseases.

Δ 6.19.1 Category A medical conditions shall include the following:

- (1) Malignant disease that is newly diagnosed, untreated, or currently being treated, or under active surveillance due to the increased risk for reoccurrence, unless not interfering with the performance of the essential job tasks
- (2) Any tumor or similar condition that results in the candidate not being able to perform one or more of the essential job tasks

6.19.2 Category B medical conditions shall be evaluated on the basis of an individual's current physical condition and on the staging and prognosis of the malignancy (i.e., likelihood that the disease will recur or progress), and include the following:

- (1)* Benign tumors
- (2)* History of CNS tumor or malignancy
- (3)* History of head and neck malignancy
- (4)* History of lung cancer
- (5)* History of GI or GU malignancy
- (6)* History of bone or soft tissue tumors or malignancies
- (7)* History of hematological malignancy

6.20 Psychiatric Conditions and Psychological Disorders. See Annex E.

Δ 6.20.1 Category A medical conditions shall include any psychiatric condition that results in the candidate not being able to perform one or more of the essential job tasks.

Δ 6.20.2 Category B Medical Conditions.

N 6.20.2.1 The physician, in consultation with a mental health professional (if clinically indicated), shall report any applicable job limitations to the fire department regarding a candidate's anxiety disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.2 The physician, in consultation with a mental health professional, shall report any applicable job limitations to the fire department regarding a candidate's bipolar disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment

- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) No suicide attempts in the past 12 months
- (5) No manic episodes in the past 12 months
- (6) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.3 The physician, in consultation with a mental health professional (if clinically indicated), shall report any applicable job limitations to the fire department regarding a candidate's depressive disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) No suicide attempts in the past 12 months
- (5) Evaluation that the member's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.4 The physician, in consultation with a mental health professional (if clinically indicated), shall report any applicable job limitations to the fire department regarding a candidate's post-traumatic stress disorder (PTSD), unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use, dissociative disorders, and sleep disorders
- (4) No suicide attempts in the past 12 months
- (5) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.5 The physician, in consultation with a mental health professional, shall report any applicable job limitations to the fire department regarding a candidate's delusional disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) No psychotic symptoms in the past 12 months
- (5) No suicide attempts in the past 12 months
- (6) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.6 The physician, in consultation with a mental health professional, shall report any applicable job limitations to the fire department regarding a candidate's brief psychotic disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) No psychotic symptoms in the past 12 months
- (5) No suicide attempts in the past 12 months
- (6) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.7 The physician, in consultation with a mental health professional, shall report any applicable job limitations to the fire department regarding a candidate's schizophreniform disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) No psychotic symptoms in the past 12 months
- (5) No suicide attempts in the past 12 months
- (6) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.8 The physician, in consultation with a mental health professional, shall report any applicable job limitations to the fire department regarding a candidate's schizophrenia, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) No psychotic symptoms in the past 12 months
- (5) No suicide attempts in the past 12 months
- (6) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.9 The physician, in consultation with a mental health professional, shall report any applicable job limitations to the fire department regarding a candidate's schizoaffective disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including substance-use and sleep disorders
- (4) No psychotic symptoms in the past 12 months
- (5) No manic episodes in the past 12 months
- (6) No suicide attempts in the past 12 months
- (7) Evaluation that the candidate's condition does not interfere with the safe performance of the essential job tasks defined in Chapter 5

N 6.20.2.10 The physician, in consultation with a mental health professional, shall report any applicable job limitations to the fire department regarding a candidate's substance-use disorder, unless all of the following conditions are met:

- (1) Compliance with treatment, if indicated
- (2) No disqualifying side effects from treatment
- (3) Treatment of comorbidities, including PTSD, depression, and sleep disorders
- (4) No substance use in the past 12 months
- (5) Evaluation that the candidate's condition does not interfere with the performance of the essential job tasks defined in Chapter 5

Chapter 7 Occupational Medical Evaluation of Members

7.1 General.

7.1.1 The fire department shall establish and maintain a confidential occupational medical evaluation program for members.

7.1.2 Occupational medical evaluations shall be conducted as a baseline for surveillance and annually thereafter.

7.1.3* An occupational medical evaluation shall be performed following a member's occupational exposure, illness, injury, or protracted absence from the job.

7.1.3.1 The scope of that evaluation shall be determined by the fire department physician after reviewing the type and severity of the condition.

7.1.4 The components of the medical evaluations shall conform to all applicable U.S. OSHA standards, including 29 CFR 1910.120, "Hazardous waste operations and emergency response"; 29 CFR 1910.134, "Respiratory protection"; 29 CFR 1910.95, "Occupational noise exposure"; and 29 CFR 1910.1030, "Bloodborne pathogens."

7.2 Member Education Regarding Occupational Medical Evaluation Program.

7.2.1 The fire department, the fire department physician, and member organizations where they exist shall be responsible to convey the purposes and importance of the annual occupational medical evaluation to members and to the AHJ.

7.2.2 The purpose of the annual occupational medical evaluation of members shall include but cannot be limited to the following:

- (1) Identifying conditions that interfere with a member's physical or mental ability to safely perform essential job tasks without undue risk of harm to self or others
- (2) Monitoring the effects of exposure to specific biological, physical, or chemical agents on individual members
- (3) Detecting changes in a member's health that can be related to harmful working conditions
- (4) Detecting patterns of disease or injury occurrence in the workforce that could indicate underlying work-related problems
- (5)* Providing members with information about their current health, promoting wellness, and referring them for appropriate further evaluation and treatment
- (6) Providing members with information and education about occupational hazards
- (7) Providing a cost-effective investment in work-related disease prevention, early detection, and health promotion for members
- (8) Complying with federal, state, provincial, local, and/or other jurisdictional requirements

7.3 Timing of the Annual Occupational Medical Evaluation of Members.

7.3.1 All members shall receive a baseline medical evaluation after hiring and prior to performing **firefighter** emergency functions and at least annually thereafter.

7.3.2 The baseline medical evaluation shall include the components of the annual occupational medical evaluation not performed as part of the candidate medical evaluation, provided the candidate medical evaluation was performed within the past 12 months.

7.3.3 The annual evaluation shall be completed every 12 months (± 3 months).

7.3.4 Annual medical evaluations shall be compared to baseline and subsequent evaluations to identify clinically relevant changes.

7.3.5 The interval requirements for performance of the annual occupational medical evaluation shall not preclude more frequent medical evaluations of members for new or recurring conditions when requested by the member, fire department physician, or AHJ.

7.4 Components of the Annual Occupational Medical Evaluation of Members.

7.4.1 All components listed in Section 7.5 through Section 7.7 shall be included in the baseline and annual occupational medical evaluations of members.

7.4.2 It shall be acceptable for certain components of the annual occupational medical evaluation to be performed by a member's private physician, provided full results are forwarded in the required time frame to the fire department physician.

7.4.3 Each medical evaluation shall include a medical history, including exposure and behavioral health histories; physical examination; blood tests; urinalysis; vision tests; audiograms; spirometry; chest x-ray, as indicated; ECG; cancer screening, as indicated; and immunizations and infectious disease screening, as indicated.

7.4.4 Tests for illegal drugs shall not be performed as part of the annual medical evaluation.

7.5 Medical History.

7.5.1* A medical history questionnaire shall be completed by each member to provide baseline information with which to compare future medical concerns.

7.5.2 An annual medical history questionnaire, which includes changes in health status and known occupational exposures since the previous annual evaluation, shall be completed by each member to provide follow-up information.

7.5.3 Information on the questionnaire and interval concerns shall be reviewed with each member by the fire department physician or designated medical evaluator.

7.6 Physical Examination. The annual physical examination shall include each of the following components:

- (1) Vital signs [temperature, pulse, and respiratory rate, and blood pressure (BP)]
 - (a) BP shall be measured according to the recommendations of the *Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure* (JNC 7)
- (2) Head, eyes, ears, nose, and throat (HEENT)
- (3) Neck
- (4) Cardiovascular
- (5) Pulmonary
- (6) Breast
- (7) Gastrointestinal with digital rectal exam as clinically indicated
- (8) Hernia
- (9) Lymph nodes
- (10) Neurological
- (11) Musculoskeletal
- (12)* Skin (includes screening for cancers)
- (13) Vision

7.7 Ancillary Tests.

7.7.1* Blood Tests. Blood tests shall be performed for fire-fighters, at minimum, every three years for those under the age

of 40, and every year for those over the age of 40, and shall include the following:

- (1) CBC with differential, RBC indices and morphology, and platelet count
- (2) Electrolytes (Na, K, Cl, HCO₃, or CO₂)
- (3) Renal function (BUN, creatinine)
- (4) Glucose
- (5) Liver function tests (ALT, AST, direct and indirect bilirubin, alkaline phosphatase)
- (6) Total cholesterol, HDL, LDL, clinically useful lipid ratios (e.g., percent LDL), and triglycerides

7.7.2 Urine Laboratory Tests. The urine laboratory tests required shall include the following:

- (1) Dipstick analysis for glucose, ketones, leukocyte esterase, protein, blood, and bilirubin
- (2) Microscopic analysis for RBC, WBC, casts, and crystals if indicated by results of dipstick analysis
- (3) Analysis for occupational chemical exposure if indicated

7.7.3* Audiography. Hearing thresholds shall be assessed annually in each ear at each of the following frequencies:

- (1) 500 Hz
- (2) 1000 Hz
- (3) 2000 Hz
- (4) 3000 Hz
- (5) 4000 Hz
- (6) 6000 Hz
- (7) 8000 Hz

7.7.3.1 The fire department physician or other qualified medical evaluator shall compare audiogram results obtained during yearly evaluations with baseline and subsequent test results.

7.7.3.2 Standard threshold shifts shall be corrected for age as permitted by OSHA.

7.7.4 Spirometry.

7.7.4.1* Pulmonary function testing (spirometry) shall be conducted annually to measure the member's forced vital capacity (FVC), forced expiratory volume in 1 second (FEV₁), and the absolute FEV₁/FVC ratio.

7.7.4.2 The fire department physician or other qualified medical evaluator shall compare spirometry results obtained during yearly evaluations with baseline and subsequent test results.

7.7.4.3* FEV₁ and FVC results shall be expressed as the absolute value (liters or milliliters) and as percent predicted adjusted for gender, age, height, and ethnicity using NHANES III normative equations.

7.7.5 Chest Radiographs.

7.7.5.1 Chest x-rays shall include an initial baseline and shall be repeated as medically indicated.

7.7.5.2 The fire department physician or other qualified medical evaluator shall compare any chest radiographs with baseline and subsequent radiographs.

7.7.6 Electrocardiograms (ECGs).

7.7.6.1 A resting 12-lead ECG shall be performed as part of the baseline medical evaluation and shall be performed annually after age 40 or as clinically indicated.

7.7.6.2 The fire department physician or other qualified medical evaluator shall compare baseline and subsequent ECGs.

7.7.6.3 The fire department physician or other qualified medical evaluator shall compare baseline and subsequent stress tests, when available, to identify clinically relevant changes.

7.7.7 Risk Stratification.

7.7.7.1 Asymptomatic firefighters 40 years of age or older with no known atherosclerotic cardiovascular disease (ASCVD) shall be assessed annually for their 2-year or 10-year risks of ASCVD, defined as coronary death, nonfatal myocardial infarction, or fatal or nonfatal stroke.

7.7.7.2 Asymptomatic firefighters younger than 40 years of age known to be at high risk for ASCVD shall be assessed for coronary artery disease.

7.7.7.3 The 2-year Framingham risk tables or the 10-year heart risk calculator created by the American College of Cardiology/American Heart Association (ACC/AHA) shall be used to generate a 2-year or 10-year risk of ASCVD, taking into consideration the individual's age, sex, race, total cholesterol, high-density lipoprotein (HDL) cholesterol, systolic blood pressure, blood-pressure-lowering medication use, diabetes status, and smoking status.

N 7.7.7.3.1 Those members assessed as being at an ASCVD risk of ≥ 2 percent over the next 2 years or ≥ 5 percent over the next 10 years shall be counseled on risk factor reduction and referred to their PCP for risk factor reduction options.

Δ 7.7.7.3.1.1* Those members assessed as being at 2–4 percent ASCVD over the next 2 years or 10 to <20 percent risk of ASCVD over the next 10 years shall be further evaluated using symptom-limiting exercise stress testing (EST) with imaging [e.g., echocardiography, technetium (^{99m}Tc) sestamibi study] to at least 12 METs.

Δ 7.7.7.3.1.2 Negative ESTs shall be repeated at least every 2 to 5 years or as clinically indicated.

N 7.7.7.3.1.3 Positive ESTs shall be referred to a cardiologist for further evaluation and treatment.

Δ 7.7.7.3.2 Those members assessed as being at 4 percent risk of ASCVD over the next 2 years shall be referred to a cardiologist for further evaluation and treatment.

7.7.8 Mammography.

7.7.8.1 Mammography shall be performed on each female member bi-annually for those over the age of 40 and annually for those over the age 50 or as clinically indicated.

7.7.8.2 A qualified radiologist shall compare mammograms to prior mammograms.

7.7.8.3 The fire department physician shall compare mammography reports to prior reports.

Δ 7.7.9 Immunizations and Infectious Disease Screening. The following infectious disease immunizations or infectious disease screenings shall be provided, as indicated:

- (1)* Tuberculosis (TB) screening—baseline, by either tuberculin skin testing using the tuberculin purified protein derivative (PPD) or the tuberculin blood test (i.e., interferon gamma release assay); subsequent tuberculosis screening to be performed annually or at a frequency

according to CDC guidelines unless the member has history of a positive tuberculin screening test, in which case CDC guidelines for management and subsequent chest radiographic surveillance apply

- (2) Hepatitis C virus screening—baseline, following occupational exposure, and if requested by the fire department physician or member
- (3) Hepatitis B virus vaccinations and titers—as specified in CDC guidelines; laboratory confirmation of immunity to be tested 1–2 months after completion of the vaccination 3 dose series
- (4)* Tetanus/diphtheria (Td) or Tetanus/diphtheria/pertussis (Tdap) vaccine—Tdap vaccine should be given once to replace the one Td booster which is given every 10 years or the 5-year wound management Td dose
- (5)* Measles, mumps, rubella vaccine (MMR)—in absence of documented immunity, two doses of MMR to be administered according to current immunization guidelines
- (6) Polio vaccine—a single booster of IPV for members traveling to endemic areas in the line of duty, or as outlined in the *Morbidity and Mortality Weekly Report* article, “Polio-myelitis Prevention in the United States: Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP)”
- (7) Hepatitis A vaccine offered to high-risk personnel [HAZMAT, USAR, and SCUBA] and other personnel with frequent exposure to contaminated water
- (8) Varicella vaccine—offered to all non-immune personnel
- (9) Influenza vaccine — offered to all personnel annually unless required by state or local regulations
- (10) HIV screening—baseline, following occupational exposure, and if requested by the fire department physician or member

7.7.9.1 Pre-screening and immunization against biological threat agents shall be made available to members following CDC guidelines or recommendations.

7.7.9.2* All members shall be offered immunizations against infectious diseases as required by the AHJ and by 29 CFR 1910.1030, “Bloodborne pathogens.”

7.7.9.3 The fire department physician shall ensure that all members are offered currently recommended immunizations.

7.7.10 Post-Exposure Bloodborne Pathogen Testing.

7.7.10.1 Physicians who care for members shall follow current CDC recommendations for post-exposure prophylaxis (PEP) for bloodborne pathogen (BBP) exposures.

7.7.10.2* There shall be a written protocol for members who present with BBP exposures.

7.7.11 HIV Testing. HIV testing shall be offered on a confidential basis as part of post-exposure protocols and as requested by the fire department physician or member.

7.7.11.1 All results from HIV tests shall be provided directly to the member and shall be maintained by the physician as confidential documents.

7.7.11.2 Results from HIV tests shall not be forwarded to any local, state, provincial, national, or international authorities or databases unless mandated by public health statutes.

7.7.12 Heavy Metal Evaluation.

7.7.12.1 Baseline testing for heavy metals shall be required when indicated by known exposure or substantial risk.

7.7.12.2 Evaluations shall be performed following known exposures, for recurrent exposures, or where required under federal, state, or provincial regulations.

7.7.13 Colon Cancer Screening.

7.7.13.1* Stool-based blood testing risks and benefits shall be discussed with all members above the age of 40, or earlier if clinically indicated.

7.7.13.2* Visual exams (e.g., colonoscopy, CT colonoscopy, or flexible sigmoidoscopy) or stool-based testing shall be recommended to all members ages 45 to 75, or earlier if clinically indicated and repeated at regular intervals.

▲ 7.7.14* Prostate Cancer.

N 7.7.14.1 Due to increased prostate cancer risk, the fire department physician shall discuss the risks and benefits of prostate cancer screening, including prostate-specific antigen (PSA) testing, with all male firefighters beginning at age 50 and annually thereafter.

7.7.14.2 For firefighters who are at a higher risk for prostate cancer (e.g., African-Americans or where one or more first-degree relatives have been diagnosed with prostate cancer at an early age), the physician shall discuss the risks and benefits of prostate cancer screening, including PSA testing, beginning at age 40 and annually thereafter.

7.7.15 Lung Cancer Screening.

7.7.15.1 Low-dose computed tomography (LDCT) shall be performed annually on firefighters ages 50–74 who have at least a 20-pack-per-year smoking history and currently smoke or have quit within the past 15 years.

7.7.15.2 Screening shall be discontinued once a firefighter has not smoked cigarettes for 15 years or is too ill to benefit.

7.7.16 Cervical Cancer Screening. Female firefighters shall be screened for cervical cancer with cytology (i.e., Pap smear) every 3 years from ages 21 to 65 or, for firefighters who want to lengthen the screening interval, with high-risk human papillomavirus (HPV) testing with or without cytology every 5 years.

• 7.7.17 Testicular Cancer Screening.

7.7.17.1 A baseline examination shall be performed by a health care provider.

7.7.18 Bladder Cancer Screening.

7.7.18.1 Urine shall be evaluated for blood (hematuria).

7.7.18.2 A positive dipstick for hematuria shall require a follow-up and referral which could involve upper tract imaging, cystoscopy, and/or urine cytology.

7.7.19 Oral Cancer Screening.

7.7.19.1 The entire mouth shall be examined for signs of oral and oropharyngeal cancers.

7.7.20 Thyroid Cancer Screening.

7.7.20.1 Physical exam for palpable nodules shall be part of the annual physical examination.

N 7.7.21 Skin Cancer Screening. Physical exam of a member's skin shall be conducted annually for evidence of cancer.

7.7.22 Sleep Disturbance Screening.

7.7.22.1 Screening for sleep disorders using a validated questionnaire, such as the Berlin Questionnaire or Epworth Sleepiness Scale, shall be provided annually.

7.7.22.2* For firefighters with a high index of suspicion for a sleep disorder based on questionnaires or biometric data, the physician shall discuss the risks and benefits of testing and treatment.

7.7.23* Cancer and Cardiovascular Disease Risk Reduction.

7.7.23.1 The fire department physician shall annually inform members of the heightened risks of cardiovascular disease and various types of cancer associated with firefighting.

7.7.23.2 In addition to medical screening for these entities as outlined in this standard, the member shall be apprised of occupational routes of hazardous exposures related to firefighting, as well as common signs, symptoms, and preventive measures for both cardiovascular disease and cancers.

7.7.24 Occupational Stress Awareness Consultation.

7.7.24.1 The fire department physician shall, during the annual physical, inform the member of, and assess for the heightened risks of, stress associated with occupational exposures related to firefighting.

7.7.24.2 The fire department physician shall make the member aware of common adverse signs and symptoms of occupational stress, inform the member of practices that might limit the damaging effects of occupational stress, and provide the member with referral to licensed behavioral health specialists trained to recognize and treat stress-related disorders in first responders as indicated.

N 7.7.25 Hormone Imbalance Awareness Consultation. During the annual physical, the fire department physician shall inform the member of the heightened risks of certain hormone therapy, such as testosterone therapy in male members, that can have adverse effects on a member's health.

N 7.7.26 Behavioral Health Screening.

N 7.7.26.1* The fire department physician or qualified health-care provider shall, in advance of or during the annual physical, provide behavioral health screening for posttraumatic stress disorder (PTSD), major depressive disorder, active suicidality, and substance-use disorder.

N 7.7.26.1.1 Prior to conducting screening, the fire department physician or qualified healthcare provider shall provide the member a written explanation of the purpose of behavioral health screening.

N 7.7.26.1.2 The behavioral health screening explanation shall state behavioral health screening is not intended to provide a diagnosis but to identify symptoms that might indicate a behavioral health risk and warrant further evaluation.

N 7.7.26.1.3 The behavioral health screening explanation shall state that screening results will be kept strictly confidential.

N 7.7.26.1.4 Behavioral health screening results shall not be used to remove a member from duty, unless the member

displays an imminent threat to the physical safety of self or others.

N 7.7.26.2 The fire department physician or qualified healthcare provider shall use a validated screening instrument to screen for PTSD, major depressive disorder, active suicidality, and substance-use disorder. (*See Annex E.*)

N 7.7.26.3 Self-Screening.

N 7.7.26.3.1 An incumbent firefighter shall be provided with the selected screening instruments in self-administered format, where applicable, to complete prior to entering their annual physical exam.

N 7.7.26.3.2 Screening results shall be reviewed and interpreted by the department physician or qualified healthcare provider prior to or during the annual physical exam.

N 7.7.26.4 Referrals.

N 7.7.26.4.1 An incumbent firefighter who screens positively for PTSD, major depressive disorder, or substance-use disorder shall receive a referral to a qualified behavioral health care provider.

N 7.7.26.4.2 A fire department shall provide the fire department physician or qualified healthcare provider conducting the annual screening a referral list of three preferred behavioral health providers that was updated in the last six months.

N 7.7.26.5* An incumbent firefighter who displays a threat to their physical safety or the safety of others at the time of their annual examination shall be referred to a qualified behavioral health care provider or facility for an emergency psychiatric evaluation.

Chapter 8 Annual Occupational Fitness Evaluation of Members

8.1 Weight and Body Composition.

8.1.1* Body weight shall be measured and recorded annually.

8.1.2 A body composition evaluation including the following shall be conducted on personnel solely for the purpose of departmental health surveillance:

- (1)* Circumferential measurements
- (2) Hydrostatic weighing or Bod-Pod
- (3)* Skinfold measurements
- (4) Bio impedance analysis

8.2 Annual Fitness Evaluation.

8.2.1 A mandatory fitness evaluation that is not punitive or competitive shall be conducted annually as part of an individualized program.

8.2.1.1 All component results of the mandatory fitness evaluation shall be used to establish an individual's baseline or measured against the individual's previous assessments and not against any standard or norm.

Δ 8.2.2 The mandatory fitness evaluation shall include a mandatory pre-evaluation procedure and the components in 8.2.2.1 and 8.2.2.2. (*For additional information, see The Fire Service Joint Labor Management Wellness-Fitness Initiative.*)

8.2.2.1* An evaluation of aerobic capacity shall be performed after appropriate medical evaluation.

Δ 8.2.2.1.1* Testing shall be conducted using an appropriate maximal or submaximal protocol.

8.2.2.1.2* At levels below 12 METs, a firefighter shall be counseled to improve his/her fitness.

8.2.2.1.3 At levels below 10 METs, participation in a prescribed aerobic fitness program shall be required.

8.2.2.1.4 At levels at or below 8 METs, a prescribed aerobic fitness program shall be required, and the AHJ shall be advised to consider restriction from essential job tasks 1, 2, 4, 5, 6, 7, 8, 9, and 13.

Δ 8.2.2.2 An evaluation of muscular strength, endurance, and flexibility shall be conducted in accordance with *The Fire Service Joint Labor Management Wellness-Fitness Initiative*.

Chapter 9 Essential Job Tasks — Specific Evaluation of Medical Conditions in Members

9.1 Essential Job Tasks.

9.1.1 The essential job tasks listed by number in this chapter are the same as those listed in Chapter 5 and shall be validated by the fire department as required by Chapter 5.

9.1.2 The fire department physician shall use the list of essential job tasks in evaluating the ability of a member with specific medical conditions to perform specific job tasks.

Δ 9.1.3 Essential job tasks referenced throughout this chapter by number only shall correspond to the following model list:

- (1)* Wearing PPE and SCBA, while performing firefighting tasks (e.g., hoseline operations, extensive crawling, lifting and carrying heavy objects, ventilating roofs or walls using power or hand tools, forcible entry), rescue operations, and other emergency response actions under stressful conditions, including working in extremely hot or cold environments for prolonged time periods
- (2) Wearing an SCBA, which includes a demand-valve-type positive-pressure facepiece or HEPA filter mask, which requires the ability to tolerate increased respiratory workloads
- (3) Exposure to toxic fumes, irritants, particulates, biological (i.e., infectious) and nonbiological hazards, or heated gases, despite the use of PPE and SCBA
- (4) Climbing at least six flights of stairs or walking a similarly strenuous distance and incline in jurisdictions without tall buildings while wearing PPE and SCBA, commonly weighing 40–50 lb (18–23 kg) and carrying equipment/tools weighing an additional 20–40 lb (9–18 kg)
- (5) Wearing PPE and SCBA that is encapsulating and insulated, which will result in significant fluid loss that frequently progresses to clinical dehydration and can elevate core temperature to levels exceeding 102.2°F (39°C)
- (6) Working alone while wearing PPE and SCBA, searching, finding, and rescue-dragging or carrying victims ranging from newborns to adults weighing over 165 lb (75 kg) to safety despite hazardous conditions and low visibility
- (7) While wearing PPE and SCBA, advancing water-filled hoselines up to 1¾ in. (45 mm) in diameter from fire apparatus to occupancy [approximately 150 ft (50 m)], which can involve negotiating multiple flights of stairs, ladders, and other obstacles

- (8) While wearing PPE and SCBA, climbing ladders, operating from heights, walking or crawling in the dark along narrow and uneven surfaces that might be wet or icy, and operating in proximity to electrical power lines or other hazards
- (9) Unpredictable, prolonged periods of extreme physical exertion as required by emergency operations without benefit of a warm-up period, scheduled rest periods, meals, access to medication(s), or hydration
- (10) Operating fire apparatus or other vehicles in an emergency mode with emergency lights and sirens
- (11) Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments, including hot, dark, tightly enclosed spaces, that is further aggravated by fatigue, flashing lights, sirens, and other distractions
- (12) Ability to communicate (i.e., give and comprehend verbal orders) while wearing PPE and SCBA under conditions of high background noise, poor visibility, and drenching from hose lines or fixed protection systems (e.g., sprinklers)
- (13) Functioning as an integral component of a team, where sudden incapacitation of a member can result in mission failure or in risk of injury or death to members of the public or other team members
- (14) Working in shifts, including during nighttime, that can extend beyond 12 hours

9.1.4 Special Teams.

9.1.4.1 In addition to essential job tasks specified in 9.1.3(1) through 9.1.3(14), members of specialized teams such as hazardous materials units, SCUBA teams, technical rescue teams, EMS teams, or units supporting tactical law enforcement operations shall be evaluated for their ability to perform essential job tasks and wear specialized PPE related to the duties of those specialized teams.

9.1.4.2 The fire department shall do both of the following:

- (1) Define essential job tasks
- (2) Provide the fire department physician with a description of the risks associated with essential job tasks and specialized PPE as well as any additional medical or physical requirements that are not enumerated in this standard

9.1.4.3 In defining essential job tasks, the fire department shall consider the impact on the members required to wear or utilize specialized PPE that can increase weight, environmental isolation, sensory deprivation, or dehydration potential above levels experienced with standard fire suppression PPE.

9.2 Fire Department Physician Roles. After individually evaluating the member and the member's medical records, including job-related medical rehabilitation records, the fire department physician shall recommend restricting members from performing only those specific job tasks that cannot be performed by the member given his or her medical condition.

9.2.1 The fire department physician shall perform an individualized assessment of the fire department member.

9.2.2* The fire department shall, on a case-by-case basis, provide the AHJ a statement that documents the specific essential job task(s) (see 9.1.3) the member is restricted from performing.

9.2.3* The fire department physician shall not comment on whether or not the member can continue employment in the fire department.

9.2.4 There shall be no blanket exclusions.

9.2.5 The AHJ shall determine whether or not the restrictions put forth by the fire department physician can or cannot be accommodated.

9.3 Medical Conditions Involving Head, Eyes, Ears, Nose, Neck, or Throat.

9.3.1* Physician Evaluation.

9.3.1.1 If the member has any medical conditions involving the head, eyes, ears, nose, neck, or throat, the member shall be individually evaluated for conditions that interfere with the member's ability to comfortably wear and be protected by the firefighter's protective ensemble and that might compromise the member's ability to perform essential job tasks 2, 4, 5, and 13.

9.3.1.2 After the evaluation and a final medical determination of the member's condition, the physician shall report any applicable job limitations to the fire department.

9.3.2 Physician Guidance. When evaluating a member with medical conditions involving the head, eyes, ears, nose, neck, or throat, the physician shall consider the following:

- (1) Deformities of the skull associated with evidence of disease of the brain, spinal cord, or peripheral nerves can result in the potential for sudden incapacitation and the inability to properly wear protective equipment.
- (2) Contraction of head and neck muscles can interfere with wearing of protective equipment, impair speech, or otherwise compromise a member's ability to perform essential job tasks.

9.3.3 Disorders of the Eyes or Vision.

9.3.3.1* Physician Evaluation.

9.3.3.1.1 The physician shall report any applicable job limitations to the fire department regarding disorders of the eyes or vision that might compromise the member's ability to perform essential job tasks 6, 8, 10, or 11, including the following:

- (1)* Far visual acuity worse than 20/40 in each eye corrected with contact lens or spectacles, and far visual acuity uncorrected worse than 20/100 binocular for wearers of hard contacts or spectacles
- (2)* Monocular vision, stereopsis without fusional capacity, night blindness, or loss of peripheral vision (i.e., horizontal field of vision less than 110 degrees in each eye), which compromises the member's ability to perform essential job task 10
- (3) Far visual acuity worse than 20/100 in the worse eye, corrected or uncorrected, which compromises the member's ability to perform essential job task 10.
- (4) Near visual acuity less than 20/40 binocular, uncorrected or corrected

9.3.3.1.2 Successful soft contact lens wearers shall not be subject to the uncorrected standard in 9.3.3.1.1(1).

9.3.3.2 Physician Guidance. The physician shall consider that new monocular vision requires a minimum of 6 months for depth perception accommodation to perform other essential job tasks.

9.3.4 Abnormal Hearing.

△ 9.3.4.1* **Physician Evaluation.** The physician shall report any applicable job limitations to the fire department regarding abnormal hearing that impairs a member's ability to hear and understand the spoken voice under conditions of high background noise; or hear, recognize, and directionally locate cries or audible alarms, which compromises the member's ability to perform essential job tasks 2, 6, 8, 10, 12, and 13.

△ 9.3.4.2* **Minimum Hearing Standard.** Hearing aids or other hearing assistive devices shall be required for members who have an average hearing loss in the unaided better ear greater than 40 decibels (dB) at 500 Hz, 1000 Hz, 2000 Hz, and 3000 Hz when tested on an audiometric device calibrated per ANSI/ASA S3.6, *Specification for Audiometers*.

9.3.4.3 Physician Guidance.

9.3.4.3.1 Hearing assistive devices shall not be used during audiometric testing.

9.3.4.3.2 Hearing assistive devices shall be required by someone who meets the parameters stated in 9.3.4.2.

△ 9.3.4.3.3 If the hearing assistive device fails, the member shall replace it to meet the minimum hearing loss standard of 40 decibels or less at 500 Hz, 1000 Hz, 2000 Hz, and 3000 Hz when tested on an audiometric device calibrated per ANSI/ASA S3.6, *Specification for Audiometers*.

9.3.5* **Vertigo, Ataxia, or Disturbance of Gait and Balance.** The physician shall report any applicable job limitations to the fire department regarding any condition causing chronic or recurring vertigo, ataxia, or other disturbance of gait and balance that compromise the member's ability to perform essential job tasks 1, 8, 10, and 13.

9.3.6 Nose, Nasopharynx, Oropharynx, or Dental Structures.

△ 9.3.6.1* **Physician Evaluation.** The physician shall report any applicable job limitations to the fire department regarding any deformity or disease of the nose, nasopharynx, oropharynx, or dental structures, including anosmia and sinusitis, that might compromise the member's ability to perform essential job tasks 2, 3, 5, 8, 12, and 13.

△ 9.3.6.2* **Physician Guidance.** The physician shall report any applicable job limitations to the fire department regarding obstructive sleep apnea, which, if not properly treated, might compromise the member's ability to perform essential job tasks 2, 3, 5, 8, 12, and 13.

9.4* Lung, Chest Wall, and Respiratory Disorders.

△ 9.4.1 Lung, chest wall, and respiratory disorders shall include breathing disorders and the exchange of respiratory gases (i.e., oxygen and carbon dioxide), central neurologic control of respiratory drive, nose, sinuses, throat, pharynx, larynx, trachea, airways, lungs, pleura, and chest wall.

△ 9.4.2 When evaluating a member for lung, chest wall, and respiratory disorders, the physician shall consider the following:

- (1) Efficient breathing and respiratory gas exchange is required for essential job tasks 1, 2, 3, 4, 5, 7, 9, and 13.
- (2) Wearing protective clothing increases the oxygen consumption required to perform these tasks and, therefore, increases the respiratory workload.

- (3) SCBA is a positive-pressure demand valve respirator that provides a barrier against the inhalation of noxious/toxic gases and particulate matter but at increased metabolic cost due to its weight and increased respiratory workload (i.e., resistance and dead space).
- (4) If respiratory function or gas exchange is already compromised (i.e., increased work of breathing from structural or functional abnormalities, hypoxia, or hypercapnia) prior to the performance of essential job tasks, then the increased oxygen demand of strenuous physical exertion, while wearing PPE or SCBA, leads to early onset of fatigue or respiratory insufficiency.
- (5) Lung, chest wall, and respiratory disorders can compromise the member's ability to perform essential job tasks 1, 2, 3, 4, 5, 7, 9, and 13.

△ 9.4.3 If the member has any lung, chest wall, or respiratory disorders, the member shall be individually evaluated in accordance with 9.4.4 through 9.4.24 to determine if the disorders compromise the member's ability to perform the essential job tasks.

9.4.4 Tracheostomy.

△ 9.4.4.1 **Physician Evaluation.** The physician shall report any applicable job limitations to the fire department regarding a member's tracheostomy that compromises the member's ability to wear SCBA (essential job task 2), communicate due to oropharyngeal dysfunction (essential job task 12), and clear secretions or inhaled particulate matter (essential job task 3).

9.4.4.2 **Physician Guidance.** The physician shall consider that a member with a history of tracheostomy that is now sealed and without persistent respiratory disease or dysfunction does not prevent safe performance of essential job tasks.

9.4.5 Chronic Cough.

△ 9.4.5.1 **Physician Evaluation.** The physician shall report any applicable job limitations to the fire department regarding a member's chronic cough with or without hemoptysis, which might compromise the member's ability to wear SCBA (essential job task 2) and to perform in an irritant environment (essential job task 3).

△ 9.4.5.2* **Physician Guidance.** The physician shall consider the severity of the cough, the impact of irritants and SCBA use on cough severity, and the impact of cough severity on the ability to wear SCBA and perform strenuous exertion.

9.4.6* Asthma.

△ 9.4.6.1 **Physician Evaluation.** The physician shall report any applicable job limitations to the fire department regarding a member's asthma that compromises the member's ability to perform essential job tasks 1, 2, 3, 4, 5, 7, 9, and 13, unless the following provisions are met:

- (1) The member has no bronchospasm during exertion, temperature/humidity extremes, irritant exposures, fire activities, or hazmat activities.
- (2) The member does not use bronchodilator rescue medications during exertion, temperature/humidity extremes, irritant exposures, fire activities, or hazmat activities.
- (3) A review of the member's fire department records (e.g., training, operations, rehabilitation, and medical) verifies that no asthmatic episodes have occurred during fire suppression or hazardous materials operations or training.

- (4) The member's asthma has not required systemic corticosteroids, emergency room treatment, or hospital admission in the past 2 years.
- (5) The member shows reserve in pulmonary function (i.e., FVC and FEV₁ greater than or equal to 90 percent) and no bronchodilator response measured off all bronchodilators on the day of testing.
- (6)* The member has a normal or negative response of less than 20 percent decline in FEV₁ from baseline for provocative challenge testing or less than 13 percent decline in FEV₁ from baseline for exercise challenge testing using cold air, methacholine (PC₂₀ greater than 8 is considered normal, as response at dose greater than 8 mg might not be clinically significant), histamine, mannitol, or exercise.
- (7) The ability to wear an SCBA during all phases of fire suppression because failure to do so places an asthmatic firefighter at risk for sudden incapacitation.
- (8) The member has a signed statement from a pulmonary or asthma specialist, knowledgeable in the essential job tasks and hazards of firefighting, that the member meets the criteria specified in 9.4.6.1(1) through 9.4.6.1(5) and can perform essential job tasks 1, 2, 3, 4, 5, 7, 9, and 13 without the use of bronchodilator rescue medications.

▲ 9.4.6.2 Physician Guidance. The physician shall consider the following when evaluating the member's asthmatic condition:

- (1) Exposures to exertion, temperature extremes, cold dry air from SCBA, combustion by-products, irritants, and particulate matter are all potent provokers of asthma attacks.
- (2) Bronchodilator medications are not maintenance therapy to control symptoms in the irritant environment of the fireground or hazardous materials incident scene because their use has not been approved by the FDA for use on the fireground or hazardous materials incident scene and because several studies in the United States, Canada, Britain, New Zealand, and Australia have implicated the frequent use of beta-agonists (i.e., short- and long-acting bronchodilators) as an independent predictor or risk for sudden death and myocardial infarction.
- (3)* There is a high probability that acute hyperreactivity in this environment can induce immediate or progressive clinical asthma (i.e., bronchospasm and wheeze) that can lead to sudden incapacitation from status asthmaticus or cardiac ischemia.
- (4) The member's work history, as well as clinical findings on annual evaluation, should be used as an assessment of the member's practical ability to perform the essential job tasks.

9.4.7* Allergic Lower Respiratory Disorders.

▲ 9.4.7.1 Physician Evaluation. The physician shall report any applicable job limitations to the fire department regarding a member's allergic lower respiratory disorder that might compromise the member's ability to perform essential job tasks 1, 2, 3, 4, 5, 7, 9, and 13.

▲ 9.4.7.2 Physician Guidance. The physician shall consider that allergic lower respiratory disorder, a term used to define asthma (i.e., clinical reversible bronchospasm), is triggered by a known allergic insult and once triggered these patients have demonstrable airway hyperreactivity for weeks to months, which can be recurrent or become permanent.

▲ 9.4.8* The physician shall report any applicable job limitations to the fire department regarding a member's chronic obstructive airways diseases (e.g., chronic bronchitis, emphysema), if moderate to severe (i.e., absolute FEV₁/FVC ratio less than 0.70 and an FEV₁ less than 80 percent predicted), that compromises the member's ability to perform essential job tasks 1, 2, 3, 4, 5, 7, 9, and 13, unless the following provisions are met:

- (1) The FEV₁ is 50 percent or greater.
- (2) The member has no bronchospasm during exertion, temperature/humidity extremes, SCBA use, irritant exposures, fire activities, or hazmat activities.
- (3) The member does not require daily bronchodilator therapy.
- (4) The member has experienced continuous tobacco cessation for more than 3 months.
- (5) The member has not required systemic corticosteroids, emergency room treatment, or hospital admission for pulmonary disease, including chronic bronchitis or pneumonia, in the past 2 years.
- (6) The member can perform an exercise test to 12 METs without exercise-induced evidence of the following:
 - (a) Bronchospasm (i.e., a decline FEV₁ of more than 13 percent from baseline)
 - (b) Oxygen desaturation (i.e., a fall in oxygen saturation on room air by 4 percent from baseline or to 94 percent or less)
 - (c) Cardiac ischemia or clinically significant arrhythmias
- (7) There is no evidence of pulmonary hypertension on echocardiography.

9.4.9 Hypoxemic Disorders.

▲ 9.4.9.1 Physician Evaluation. The physician shall report the applicable job limitations to the fire department regarding a member's hypoxemic disorder, where moderate to severe (i.e., oxygen saturation less than 90 percent or a Po₂ less than 65 mm Hg, measured at rest and corrected to sea level on room air), or the presence of exercise desaturation (i.e., a fall in oxygen saturation by 4 percent from baseline or to less than 90 percent) compromises the member's ability to perform essential job tasks 1, 2, 3, 4, 7, and 13.

9.4.9.2 Physician Guidance. The physician shall recognize the following situations when evaluating the member:

- (1) A resting oxygen saturation of 90 percent to 93 percent corrected to sea level requires measurement at exercise to 12 METs to determine if desaturation (i.e., decrease in oxygen saturation by greater than or equal to 4 percent from baseline or to less than 90 percent) occurs.
- (2) Hypoxia can be the result of central regulatory disturbances, obstructive sleep apnea, asthma, chronic obstructive airways diseases, interstitial lung disease, pulmonary hypertension, chronic pulmonary embolism, and so forth.
- (3) In this environment, gas exchange abnormalities and respiratory insufficiency no matter the cause have the potential for life-threatening sudden incapacitation from cardiopulmonary insufficiency.

9.4.10 Hypercapnic Disorders.

▲ 9.4.10.1 Physician Evaluation. The physician shall report any applicable job limitations to the fire department regarding a