

GUIDELINES FOR FIREFIGHTER PHYSICAL EXAMINATIONS

Heart attack is the most common cause of on-duty firefighter fatalities. Yet, existing regulations do not require firefighters to pass periodic medical examinations. Every year, firefighters needlessly die on duty because their medical conditions are not identified or properly treated. This is especially a problem with volunteer firefighters who often tend to be older than their counterparts in career departments.

Recommendations:

- **Pre-placement Physical Examinations:** This examination should be similar to that conducted for police candidates.
- **Periodic Reexaminations:** Incumbent firefighters should be required to complete a reexamination on an annual basis and this examination should include calculation of each firefighter's heart attack risk.

Background:

In 2007, the National Institute for Occupational Safety and Health (NIOSH) issued an alert that sudden cardiac death represents the most common cause of on-duty firefighter fatalities. The report concluded that 39% of fatalities involving career firefighters and 50% of fatalities involving volunteers are due to sudden cardiac death. The higher incidence among volunteers is due to the fact that volunteers tend to be older. 43% of the heart attacks involved firefighters over 55 and one-sixth involved firefighters over age 65.

In the United States, heart attacks are the number one cause of death, striking at least 600,000 Americans each year. In half of the cases, the first symptom is death. In a recent New England Journal of Medicine study, Dr. Stefanos Kates of Harvard University concluded that,

“Firefighters do not have a higher risk of heart disease compared to the general population, but the sudden exertion of their work can trigger a heart attack in the same way shoveling snow can lead to a heart attack in someone else. Firefighters may begin their careers in better shape than others, but as they grow older they may acquire risk factors, such as high blood pressure and cholesterol as well as weight gain.”

Despite growing awareness of the problem, the incidence of firefighter deaths from heart attacks has not changed in the last decade. The key to turning this around is to require every firefighter over 35 to have an annual cardiac risk assessment. Raymond Basri M.D., a diagnostic cardiologist who specializes in firefighter issues, wrote,

“Any individual with risk factors above 10% over the next ten years should be made aware of the risk factors that could be improved to lower risk such as smoking or high blood pressure. All high-risk individuals should be asked to see their own doctors. The fire service should

not exclude these members from serving, but ask that their own doctors ensure their safety and review their situation. The department's medical examiner should not accept any clearance for a member with chest discomfort and a high risk score that does not include a stress test."

Daniel Samo, M.D., an advisor to the National Fire Protection Association (NFPOA) recommends that firefighters who have a cardiac risk score above 10% should be required to pass a stress test at 12 METS to establish that Ischemia (signs of the lack of oxygen to the heart) does not occur at the work level common to firefighting.

Because of the nature of their work, fire fighters should also be encouraged to monitor and control their blood pressure, cholesterol and weight, and stop smoking to ensure that their risk of heart attack is within reasonable limits. Because of the high stress associated with all aspects of firefighting, it may not be sufficient to limit high risk individuals from interior firefighting. Experience suggests that "exempt" fire fighters can also experience heart attacks while performing light duties such as directing traffic or operating a pump.

It is critical that municipalities address this problem because volunteer fire departments provide an important service. On average, volunteer departments save the taxpayers \$147 per resident as compared to career departments and the savings for each volunteer averages \$26,700

Current Examination Requirements:

At present, state regulations only require physical examinations for firefighters involved in special assignments such as HazMat teams. However, most towns require candidates to pass a medical before joining the fire department and a physical is also required to become a member of the NJ State Firemen's Association. This examination does not require that the candidate meet explicit physical standards, although it does require certification from the examiner that the applicant is free from disease and has no physical defects that would hinder the ability to perform the duties of a firefighter. This examination can be performed by any licensed physician.

The NJ Public Employee Occupational Safety and Health Administration (PEOSHA) requires that firefighters who are assigned to interior structural firefighting be qualified to use a respirator. Under this regulation, firefighters complete a questionnaire that is reviewed by a physician or other licensed health care professional. If in the judgment of the reviewer the questionnaire responses are satisfactory, no direct physical examination is required. The examiner must specifically identify limitations in the use of the respirator and if a follow-up medical evaluation is required. All firefighters must also be fit tested for their respirator mask.

No additional physical examinations are required by state or federal regulation, although some departments impose their own requirements. Therefore, most volunteer firefighters serve for an indefinite period of time with no regulatory requirement for reexamination. While career departments are more likely to require periodic physical examinations, many do not.

Efforts to Establish General Standards:

Every major national association representing firefighters recommends that fire departments establish a medical evaluation procedure that includes pre-placement, periodic and return to duty medical evaluations for firefighters based on uniform medical and physical fitness standards. These associations also recommend a variety of ongoing health and wellness programs. The following is a summary of their recommendations:

- National Fire Protection Association (NFPA) Standards 1500 and 1582 include detailed guidelines and protocols for conducting physical examinations and the development of comprehensive occupational health and wellness programs.
- The International Association of Firefighters (IAFF) and the International Association of Fire Chiefs (IAFC) have developed a number of initiatives centered on the development of wellness and fitness programs, and implementation guides.
- The National Volunteer Fire Council (NVFC) in collaboration with the US Fire Administration (USFA) has issued a health and wellness guide and detailed directions for a program to promote cardiac health.
- The National Fallen Firefighter Foundation (NFFF) has developed a program titled “Everybody Goes Home” which includes an initiative to develop national medical and fitness standards for firefighters.

Firefighter Concerns:

Firefighters are in general agreement that physical examinations for candidates should be based on uniform standards, and that periodic reexaminations should be conducted. Their concerns are centered on the following issues:

- The cost of a comprehensive candidate physical examination and periodic reexaminations must be appropriated. At present, most municipalities only appropriate funds for the candidate physical examination and periodic pulmonary function testing.
- Requiring a periodic physical examination might disqualify experienced incumbent firefighters from participation in structural firefighting.
- The standards established for a comprehensive candidate physical examination may be so rigorous that the pool of potential candidates may be severely diminished.

Despite these concerns, firefighters generally support an effort to strengthen the physical examination procedures for candidates and a periodic reexamination for incumbent firefighters.

Recommendations:

Candidate Pre-placement Physical Examinations:

Candidate examinations should be similar to that conducted for police candidates seeking to enroll in the Bergen County Police Academy. The candidate examination will also serve as a baseline that can be used to measure any changes in physical conditions that are identified during periodic testing. The cost for pre-placement medical examinations range from approximately \$300 to \$900 depending on the provider and testing protocol.

Pre-placement examinations should include two components:

- A physical examination conducted by a licensed physician selected jointly by the fire department and the municipality. The examination should include a medical history, examinations, and any laboratory tests required to detect physical or medical conditions that could adversely affect the ability of the candidate to safely perform essential job tasks. The recommended examination should extend to all physical systems including, skin, ears, eyes nose, and throat, cardiovascular, respiratory, gastrointestinal, genitourinary, endocrine, metabolic, musculoskeletal, and neurological systems. In addition the examination should include audiometry, visual acuity and peripheral vision testing, pulmonary function testing and an EKG if indicated. A detailed description of the candidate physical and medical standards are included in NFPA 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments, 2007 edition, Chapter 6. In addition to a medical history, the examination should include an occupational history and completion of the Occupational Safety and Health Administration Medical Respirator Evaluation Questionnaire.
- A fitness evaluation of the physical capacity of the candidate to perform essential job functions as defined in the candidate firefighter's job description should be performed by registered physical therapist whose findings should be reviewed and approved by the authorized examining physician. A listing of essential job functions and the relevant standards of performance are included in NFPA 1582, Chapter 5, Essential Job Tasks.

Annual Reexamination Physicals:

Departments should also require annual reexamination consistent with NFPA Standard 1582, Chapter 7.4-7.7. Specifically, the following components should be required:

- A complete medical history including completion of the Occupational Safety and Health Administration Medical Respirator Evaluation Questionnaire.
- Physical examination of all major body systems
- Blood and urine tests to determine cholesterol, diabetes, chemical exposure
- Audiometric and vision examination to determine status in relation to the approved standard
- Pulmonary function test to determine status in relation to approved standard

- A resting EKG followed by a stress EKG if medically indicated
- Post exposure testing as clinically indicated by medical history or by symptoms

Firefighters should be required to show evidence that all immunizations and infectious disease screenings are up to date. They should also be encouraged to secure PSA, mammography and colon cancer screenings in accordance with schedules generally accepted by medical authorities. These screenings can be secured through their group health benefits plan. If not, they should be included in the examination. Firefighters who do not meet the objective standards included in their job descriptions could be offered an opportunity to correct the deficiencies and be retested, or as an alternative be offered an alternate position with physical standards that they can meet.

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Neal Carroll
River Edge Fire Department

Robert Kirsch
Bergenfield Fire Department
President, NJ & NY Volunteer Firemen's
Association

Patrick Conner
Dumont Fire Department

Robert Moran
Englewood Fire Department

Thomas Cusker
Palisades Park Fire Department

Al Musicant
Park Ridge Fire Department

Peter Hodge
President
Bergen County Fire Chiefs Association

Gerard Naylis
Bergenfield Fire Department

Jim Kirsch
Career Lieutenant
Bergenfield Fire Department

James Pruden MD
St. Joseph's Hospital

Larry Rauch
Upper Saddle River Fire Department
Coordinator Safety Programs
County of Bergen
Department of Public Safety

Richard Silvia
Fire Marshall
Borough of Saddle River

Be advised that the information included in this report is not intended to serve as expert medical opinion and is not a substitute for seeking such opinions from a licensed medical provider with experience with the testing and certification processes described in this report. Anyone

considering the development of a preplacement and periodic medical examination program is urged to seek such professional assistance.

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