

EMS RESPIRATORY PROTECTION FOR INFECTION CONTROL FREQUENTLY ASKED QUESTIONS

1. WHAT IS RESPIRATORY PROTECTION?

In the context of EMS operations, it is the actions taken to prevent harmful agents, primarily infectious aerosols and particles, from entering the respiratory tract. Most often this is done by personnel wearing a disposable respirator certified by NIOSH as N95.

2. WHERE/WHEN IS RESPIRATORY PROTECTION NEEDED FOR EMS PERSONNEL?

Respiratory protection is needed when there is potential for a harmful agent to get into the respiratory tract. The EMS organization must consider all activities it performs and identify those that require respiratory protection and include a list of these activities in their written respiratory protection program. In particular, respiratory protection (N95 masks) should be used when near a patient who has a potentially infectious disease that is transmitted by the airborne route or when in a closed space with this type of patient. Other types of patients and circumstances will require respiratory protection to be used as described in the organizations written program.

3. WHAT TYPES OF RESPIRATORS ARE AVAILABLE?

Many types of respirators are available including the Self Contained Breathing Apparatus (SCBA) firefighters use, reusable full and half face respirators, and the common disposable respirator which is a filtering facepiece. While all can provide protection against harmful dusts, mists, and aerosols EMS is concerned with, the most common application is the N95 filtering facepiece.

http://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/

4. WHAT IS A N95 RESPIRATOR?

An N95 respirator is one of nine types of disposable particulate respirators. Particulate respirators are also known as "air-purifying respirators" because they protect by filtering particles out of the air you breathe.

http://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/



5. WHAT IS A HEPA RESPIRATOR?

HEPA respirators (High Efficiency Particle Absorbing*) are the respirators that the health care field, including EMS, formerly used for respiratory protection. They are directly replaced by the N100 mask, however for EMS the N95 mask is appropriate for protection from airborne communicable disease.

High efficiency respirators (sometimes called HEPA respirators) are labeled as "permissible respirator for dusts, fumes, mists, and radionuclides or approved for respiratory protection against dusts, fumes and mists having a time-weighted average less than 0.05 milligram per cubic meter or 2 million particles per cubic foot and radionuclides." The filter (or in a disposable respirator, the exhalation valve) in a HEPA respirator is usually color coded magenta (reddish-purple).

On July 10, 1995, the respirator certification standards used by the National Institute for Occupational Safety and Health (NIOSH) were upgraded from those of Part 11 (Title 30 of the Code of Federal Regulations, Part 11) to those of Part 84 (Title 42 of the Code of Federal Regulations, Part 84). HEPA Respirators are "Title 11 Respirators."

HEPA respirators certified under Part 11 were able to be sold and shipped by the manufacturer as NIOSH-certified until July 10, 1998. They also may continue to be used after this date.

<http://www.cdc.gov/niosh/npptl/usernotices/run-062096.html>

*Note: Other definitions for HEPA include High Efficiency Particle Attenuating, High Efficiency Particulate Air, and High Efficiency Particle Arresting.

6. IS A N95 RESPIRATOR RECOMMENDED FOR HEALTH CARE PROVIDERS?

Yes. Respirators that filter the air before it is inhaled should be used for respiratory protection.

The most commonly used respirators in healthcare settings are the N95, N99, or N100 particulate respirators. The device has a sub-micron filter capable of excluding particles that are less than 5 microns in diameter. Respirators are approved by the CDC's National Institute for Occupational Safety and Health.

Like other PPE, the selection of a respirator type must consider the nature of the exposure and risk involved

<http://www.cdc.gov/flu/avian/pdf/infectcontrol.pdf>

<http://www.cdc.gov/ncidod/dhqp/pdf/ppe/PPEslides6-29-04.pdf>

<http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>

7. WHAT IS A FILTERING FACEPIECE?

Filtering facepiece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

29CFR1910.134(b)

N95 Disposable Respirators are filtering facepieces.

8. IS A FILTERING FACEPIECE (N95 DISPOSABLE RESPIRATOR) CONSIDERED A TIGHT FITTING FACEPIECE?

Yes. A N95 Respirator relies on a seal between the mask and the wearers face to be effective. This meets OSHA's definition of a tight fitting respirator.

Tight-fitting facepiece means a respiratory inlet covering that forms a complete seal with the face. 29CFR1910.134(b)

9. IS A MEDICAL EVALUATION REQUIRED?

Yes*. A medical evaluation is required before the fit test. The organizations physician will determine if a medical examination is needed. The details of the medical program should be in the written program.

*Note: Medical evaluation not required for voluntary use of filtering facepiece respirators.

10. IS AN ANNUAL MEDICAL EVALUATION REQUIRED WHEN N95 MASKS ONLY ARE USED?

No. However, the medical director may recommend that the evaluation be annual or some other frequency.

11. DO DISPOSABLE N95 REPIRATORS NEED TO BE FIT TESTED?

Yes.* Since disposable N95 respirators are tight fitting facepiece respirators they must be fit tested as described in 29CFR1910.134(f).

"before an employee may be required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used."

http://osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=24250

*Note: Fit testing not required for voluntary use. Where use of a N95 mask is required by an organization, it is not voluntary use therefore fit testing will be required.

12. HOW OFTEN DOES FIT TESTING NEED TO BE DONE?

Annually, and when there is a physical change to the face (surgery, obvious weight change), or if a different respirator (make, model, style, size) is used. 29CFR1919.134(f)(2) & (3).

13. WHAT TYPE OF FIT TESTING IS REQUIRED?

Qualitative or Quantitative methods can be used for the N95 disposable masks.

All respirators that rely on a mask-to-face seal need to be annually checked with either qualitative or quantitative methods to determine whether the mask provides an acceptable fit to a wearer. The qualitative fit test procedures rely on a subjective sensation (taste, irritation, smell) of the respirator wearer to a particular test agent while the quantitative use measuring instruments to measure face seal leakage (for example the PortaCount, along with other manufacturers, can test N95 disposable masks. Check with the manufacturers for what is needed).

<http://www.osha.gov/SLTC/etools/respiratory/oshfiles/fittesting1.html>

14. CAN A DISPOSABLE RESPIRATOR BE REUSED?

Disposable respirators used to protect against infectious agents should not be reused. There is no practical way to clean and sanitize them for reuse.

However, that doesn't mean a mask or respirator can't be used more than once by the same person, provided it's still in reasonable condition, under emergency conditions and where adequate supplies are not available (pandemic flu scenarios) according to the Institute of Medicine (IOM) of the National Academies.

http://darwin.nap.edu/execsumm_pdf/11637.pdf

If a N95 disposable respirator will be reused by the same person the organization should carefully review the recommendations from the IOM and include procedures and training in their written respiratory protection program. Detailed information on re-use of disposable respirators can be found at the link above, and must be included in the respiratory protection program.

Elastomeric (Non-disposable) half and full face respirators fitted with N95 filters can be reused when properly cleaned and sanitized. They are an option for EMS agencies.

15. Do you need to be clean shaven when wearing a N95 disposable respirator?

Yes. When masks are required for protection or required by the organization. To be effective the mask must have a tight seal to the face. Facial hair prevents the mask from sealing.

If a tight fitting respirator (disposable or elastomeric reusable type) can not be used, there are other options that may be available including powered air purifying style units.

16. CAN A DISPOSABLE RESPIRATOR BE STERILIZED AND REUSED?

There is no practical way to clean and sanitize disposable respirators for reuse.

http://darwin.nap.edu/execsumm_pdf/11637.pdf

17. IS A WRITTEN RESPIRATORY PROTECTION PROGRAM REQUIRED?

Yes. 29 CFR1910.134(c)

18. WHAT DOES A WRITTEN RESPIRATORY PROTECTION PROGRAM HAVE TO INCLUDE?

The written respiratory protection program must contain worksite-specific procedures and elements for required respirator use. The provisions of the program include procedures for selection, medical evaluation, fit testing, training, use and care of respirators. See checklist below.

19. WHO HAS TO BE IN CHARGE OF A RESPIRATORY PROTECTION PROGRAM?

The program must be administered by a trained program administrator who is qualified and knowledgeable in respiratory protection to run all aspects of the program. 29CFR1910.134(c)
OSHA's Small Entity Guide says the following:

"You must designate a program administrator to run the program and evaluate its effectiveness. An individual is qualified to be a program administrator if he or she has appropriate training or experience in accord with the program's level of complexity.

This training or experience is appropriate if it enables the program administrator to fulfill the minimum standard requirements of recognizing, evaluating, and controlling the hazards in your workplace. For example, if your program requires air-supplying respirators for use in immediately dangerous to life or health (IDLH) environments, your program administrator must have training and experience pertaining to the use of this type of equipment. Similarly, if you don't use air-supplying respirators and don't have significant respiratory hazards at your workplace, someone with less sophisticated experience or training might be able to effectively serve in this position.

Ultimately, the appropriate qualifications for your program administrator must be determined based on the particular respiratory hazards that exist, or that are reasonably anticipated, at your workplace."

<http://www.osha.gov/Publications/secgrev-current.pdf>

20. DOES PESH (PUBLIC EMPLOYEE SAFETY & HEALTH) ENFORCE THE OSHA STANDARD FOR RESPIRATORY PROTECTION?

Yes. PESH is required by State Law to enforce OSHA standards. OSHA has approved the New York State plan for public employees.

21. IS TRAINING REQUIRED FOR USING DISPOSABLE N95 RESPIRATORS?

Yes. Exact training requirements should be described in the written respiratory program.

At a minimum the training should include which respirators to use (selection), proper donning and doffing, and limitations of the device.

22. HOW OFTEN IS TRAINING NEEDED?

Annual training is required by OSHA (29CFR1910.134)

23. WHAT TYPE/LENGTH OF TRAINING IS NEEDED?

Employees who are required to use respirators must be trained such that they can demonstrate knowledge of at least:

- why the respirator is necessary and how improper fit, use, or maintenance can compromise its protective effect
- limitations and capabilities of the respirator
- effective use in emergency situations
- how to inspect, put on and remove, use and check the seals
- maintenance and storage
- recognition of medical signs and symptoms that may limit or prevent effective use
- general requirements of this standard

There is no minimum or maximum length of training required.

24. DO SURGICAL MASKS OR COMMON DUST MASKS PROVIDE RESPIRATORY PROTECTION?

No. They only limit aerosols and secretions from becoming airborne. They can be applied to a patient when not contraindicated. However, to protect yourself, you should wear a respirator with at least a N95 rating.

Surgical masks can be worn over a disposable respirator to help keep it clean when under emergency circumstances an individual will re-use their respirator.

http://darwin.nap.edu/execsumm_pdf/11637.pdf

25. WHERE CAN I GET MORE INFORMATION ON RESPIRATORY PROTECTION?

Use an internet search engine (Google or Yahoo) or visit OSHA's web site at www.osha.gov.

26. WHAT TYPE OF PROFESSIONAL'S ASSIST ORGANIZATIONS IN DEVELOPING AND IMPLEMENTING A RESPIRATORY PROTECTION PROGRAM?

In general, industrial hygienists, safety professionals and occupational health nurses provide this type of assistance although others are qualified. An organization may want to consider using a person who is Board Certified in Safety (Certified Safety Professional, CSP) or industrial Hygiene (Certified Industrial Hygienist, CIH) or Occupational Health Nursing (Certified Occupational Health Nurse, COHN).

CHECKLIST FOR RESPIRATORY PROTECTION PROGRAMS

A written respiratory protection program that is specific to your workplace and covers the following:

- Procedures for selecting respirators.
 - Medical evaluations of employees required to wear respirators.
 - Fit testing procedures.
 - Routine use procedures and emergency respirator use procedures.
 - Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and maintaining respirators.
 - Procedures for ensuring adequate air quality for supplied air respirators.
 - Training in respiratory hazards.
 - Training in proper use and maintenance of respirators.
 - Program evaluation procedures.
 - Procedures for ensuring that workers who voluntarily wear respirators (excluding filtering facepieces) comply with the medical evaluation, and cleaning, storing and maintenance requirements of the standard.
- A designated program administrator who is qualified to administer the program.
- Provide equipment, training, and medical evaluations at no cost to employees.