

## Respiratory Fit Test FAQs

### Are respirator fit tests required?

Yes. The Occupational Safety and Health Administration (OSHA) (29 CFR 1910.134) requires a respirator fit test to confirm the fit of any respirator that forms a tight seal on the wear's face before it is to be used in the workplace to protect against known or suspect risks such as tuberculosis or influenza. The same OSHA respirator standard also prohibits tight fitting respirators to be worn by workers who have facial hair that comes between the sealing surface of the facepiece and the face of the wearer.

### Why is fit testing required?

OSHA standard 1910.134 requires that anyone using a respirator for protection from potentially infectious aerosols or droplets be fit tested annually. Because manufacturer's sizing varies and individual's facial features This standard was adopted by Kentucky's OSHA department in 2007. Furthermore, our agreement with our affiliated hospitals states that we will fit test our trainees. Failure to medically screen, train and fit test trainees who are required to use a respirator is subject to citation and penalties by OSHA.

### Who is authorized to wear an N95 Respirator?

In compliance with OSHA requirements, all trainees must be fit tested and up-to-date certification to wear an N95 respirator before performing any tasks for which this mask is indicated. In order to be fit tested, there must be no interfering facial hair such as a beard or large mustache that affects the face seal of the mask. The fit test and certification is required annually.

### When is an N95 Respirator required?

Clinical situations requiring an N95 respirator include caring for patients with or suspected of having tuberculosis, influenza, varicella or other illnesses which can be transmitted by airborne droplets or aerosols. Procedures which may generate aerosols, such as bronchoscopy, suctioning, sputum induction, collection of nasopharyngeal swabs, and intubation/extubation also require N95 respirators in addition to other infection control procedures.

The N95 respirator may also be worn by healthcare workers who require a higher level of protection (e.g. those who are pregnant or have certain medical conditions placing them at higher risk) when they are around patients with influenza-like illness.

### What is a respirator fit test?

A fit test is a test protocol conducted to verify that a respirator is both comfortable and correctly fits the user. Fit testing uses a test agent, either qualitatively detected by the wearer's sense of taste, smell or involuntary cough (irritant smoke) or quantitatively measured by an instrument, to verify the respirator's fit. See questions related to qualitative and quantitative fit testing for more specific information.

### Why is fit testing necessary?

Fit testing each model of respirator the employee is to use in workplace tasks before their use is important to assure the expected level of protection is provided by minimizing the total amount of contaminant leakage into the facepiece. The benefits of this testing include better protection for the employee and verification that the employee is wearing a correctly-fitting model and size of respirator. Higher than expected exposures to a contaminate may occur if users have poor face seals with the respirator, which can result in excessive leakage.

### How is quantitative fit testing performed?

The Occupational Safety and Health Administration (OSHA) has included the acceptance of respirator fit test protocols in its regulations at 29 CFR 1910.134. The OSHA-accepted fit test protocols can be found at 29 CFR 1910.134 appendix A. Although protocols vary, a general description is provided below.

In order to do these measurements, a small sampling tube is positioned to sample the air within the facepiece of the respirator and attached to a fit testing instrument able to calculate the percentage of particles leaking into the facepiece.

1. First, the wearer dons one of the respirator models/sizes provided by the employer that is expected to provide a good fit, in accordance with the manufacturer's instructions
2. The wearer completes a user seal check to confirm that the respirator is properly seated on his/her face
3. A fit testing adaptor is affixed to the respirator and the respirator is attached to a fit testing instrument through a small sampling tube positioned within the facepiece
4. The fit test operator then instructs the wearer to go through a series of prescribed exercises while the attached fit testing instrument measures the ratio of particles both inside and outside of the respirator. From this data, a fit factor for the tested wearer is calculated which will determine whether or not the model, brand, and size of the respirator is suitable (passable) to be used regularly by that wearer.

**How often must fit testing be done?**

At least annually. Because each brand, model, and size of particulate facepiece respirators will fit slightly differently, a user should engage in a fit test every time a new model, manufacture type/brand, or size is worn. Also, if weight fluctuates or facial/dental alterations occur, a fit test should be done again to ensure the respirator remains effective. Otherwise, fit testing should be completed at least annually to ensure continued adequate fit.

**Once I am fit tested can I use any brand / make / model respirator as long as it is the same size?**

No. A fit test only qualifies the user to put on (don) the specific brand/make/model of respirator with which an acceptable fit testing result was achieved. Users should only wear the specific brand, model, and size respirators that he or she wore during successful fit tests. [Note: respirator sizing is variable and not standardized across models or brands. For example, a medium in one model may not offer the same fit as a different manufacturer's medium model.]

**What is a respirator user seal check?**

It is a procedure conducted by the respirator wearer to determine if the respirator is properly seated to the face. The user seal check can be either a positive pressure or negative pressure checks, which are generally performed as follows: The positive pressure user seal check is where the person wearing the respirator exhales gently while blocking the paths for exhaled breath to exit the facepiece. A successful check is when the facepiece is slightly pressurized before increased pressure causes outward leakage. The negative pressure user seal check is where the person wearing the respirator inhales sharply while blocking the paths for inhaled breath to enter the facepiece. A successful check is when the facepiece collapses slightly under the negative pressure that is created with this procedure. A user seal check is sometimes referred to as a fit check. A user seal check should be completed each time the respirator is put on (donned). It is only applicable when a respirator has already been successfully fit tested on the individual.

**When should a user seal check be done?**

Once a fit test has been done to determine the best model and size of respirator for a particular user, a user seal check should be done by the user every time the respirator is to be worn to ensure an adequate seal is achieved.

**Can I just request a Powered Air Purifying Respirator (PAPR) instead of going through fit testing?**

No. Individuals who cannot be fitted and certified to use an N95 mask may use a Powered Air Purifying Respirator (PAPR) which does not require fit testing. PAPRs are expensive, limited in supply, and cumbersome to wear while providing patient care. This is not a practical solution for all trainees all the time as there are limited supplies of PAPRs at our affiliated hospitals.

**Do Powered Air-Purifying Respirators (PAPRs) require fit testing**

It depends on the type of PAPR. In most medical facilities loose fitting PAPRs (Hood or helmet style) are used. These DO NOT form a tight seal around the wearer's face and, therefore, do not require fit testing. They still require education and training.

Reference: [http://www.cdc.gov/niosh/npptl/topics/respirators/disp\\_part/respsource3fittest.html](http://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/respsource3fittest.html)