



Use of N95 Respirators in Health Care and Congregate Residential Settings: Fit Testing and Respiratory Protection Program Resources

Strict adherence to infection control procedures is critical to preventing the spread of COVID-19. The Centers for Disease Control and Prevention (CDC) and New York City Department of Health and Mental Hygiene (NYC Health Department) recommend that health care personnel (HCP) always use a [National Institute of Occupational Safety and Health \(NIOSH\)-approved N95 respirator](#) or [equivalent or higher-level respirator](#) (such as an N100 or [elastomeric respirator](#)) as part of their personal protective equipment (PPE) when caring for people who have confirmed or suspected COVID-19. In addition to HCP, congregate residential setting staff should use NIOSH-approved N95 respirators when caring for people who have confirmed or suspected COVID-19. NIOSH-approved respirators are most effective when distributed as part of a comprehensive respiratory protection program (RPP). This document describes NIOSH-approved N95 respirators and RPP components as well as provides resources to support the use of N95 respirators in health care and congregate residential settings, including tools for developing an RPP and conducting fit testing.

Description of NIOSH-approved N95 respirators

“N95 respirator” describes the class of respirators that use N95 filters to remove particles from the air breathed through them, including the virus that causes COVID-19. All [NIOSH-approved N95 respirators](#) have achieved N95 classification by removing at least 95% of airborne particles during “worst case” testing using a “most-penetrating” sized particle.¹ Typically, NIOSH-approved N95 respirators have headbands rather than ear loops. Even though the designation “N95” may appear on the packaging of many respirators, it is important to make sure respirators being procured meet NIOSH approval requirements as counterfeit products have become readily available through reseller marketplaces. See examples of counterfeit respirators and NIOSH-approval misrepresentation [here](#).

All NIOSH-approved respirators are marked with the manufacturer’s name, part number (P/N), protection provided by the filter (such as N95, N100 or P100) and “NIOSH.” HCP and congregate residential setting staff should have a medical evaluation and be fit tested for the N95 respirator they plan to use. When properly fit tested, N95 respirators provide additional protection by forming a tight seal around the face to ensure all the air passes through the filter when breathing in and out.

¹ Rengasamy S, King WP, Eimer BC and Shaffer RE. Filtration performance of NIOSH-approved N95 and P100 filtering facepiece respirators against 4 to 30 nanometer-size nanoparticles. *Journal of Occupational and Environmental Hygiene*. 2008;5(9):556-564.

Description of elastomeric respirators

[Elastomeric respirators](#) include half facepiece or full facepiece, tight-fitting respirators with replaceable cartridges or filters, with the facepieces made from synthetic or natural rubber material. The advantages of elastomeric respirators are that they can be used repeatedly, cleaned, disinfected, stored and have sealing surfaces and adjustable straps that may accommodate a better fit. However, they require maintenance and a supply of replaceable components, including straps, inhalation and exhalation valves, valve covers and filters, cartridges or canisters.

Scenarios when NIOSH-approved, fit-tested N95 Respirators are recommended

Even after HCP and congregate residential setting staff are fully vaccinated against COVID-19², it is recommended they continue to use NIOSH-approved N95 respirators in the following scenarios:

- When evaluating or coming into prolonged close contact³ with people who have confirmed or suspected COVID-19⁴, the recommended PPE includes:
 - Fit-tested, NIOSH-approved N95 (or equivalent or higher-level) respirator, gown, gloves and eye protection (face shield or goggles)
- When performing any [potentially aerosol-generating procedures](#)⁵ (for example, nebulizer treatments) with all people including those not known or suspected to have COVID-19, the recommended PPE includes:
 - Fit-tested, NIOSH-approved N95 (or equivalent or higher-level) respirator, gown, gloves and eye protection (face shield or goggles)

For all other clinical encounters and prolonged contact with people in congregate residential settings, recommended PPE includes eye protection and one of the following:

- An N95 respirator
- A respirator [approved under standards used in other countries](#) that are similar to NIOSH-approved N95 respirators
- A well-fitting face mask (including face masks with a nose wire to help conform to the face, face masks with ties rather than ear loops, the use of mask fitters, tying the face mask's ear loops and tucking in the side pleats; and fastening the face mask's ear loops behind the wearer's head). The CDC has created an [FAQ addressing use of two masks at the same time in a healthcare setting](#).⁶

² Fully vaccinated; people are considered fully vaccinated against COVID-19 starting ≥ 2 weeks after receiving the second dose in a two-dose series (e.g., Pfizer-BioNTech or Moderna), or ≥ 2 weeks after they have received a single-dose vaccine (e.g., Johnson and Johnson/Janssen).

³ The NYC Health Department defines prolonged contact in a congregate setting as a cumulative total of 10 minutes or more within a 24-hour period and 15 minutes or more in a health care setting.

⁴ Confirmed or suspected COVID-19 is defined as having a positive nucleic acid amplification test (NAAT), antigen test or [symptoms](#) of COVID-19.

⁵ Under Infection Control, see question, 'Which procedures are considered aerosol generating procedures in healthcare settings?'

⁶ Under Infection Control, see question, 'Using two masks at the same time, including the use of a cloth mask over a medical facemask to improve the fit of facemasks in healthcare settings?'

Refer to the [COVID-19 Infection Prevention Quick Guide](#) for a full table of scenarios and recommended PPE in outpatient health care settings.

For detailed information on PPE recommendations, refer to the [Updated Guidance for Use of Respirators by Health Care Personnel Caring for Patients With and Without COVID-19 in Healthcare Settings](#).

KN95 masks and N95 respirators

[KN95 masks](#) are a type of filtering facepiece respirator that filter up to 95% of particles in the air but are different from N95 respirators and have ear loops instead of headbands. KN95 masks will be marked with “KN95,” do not require fit testing, and may offer a tighter fit and more protection than a regular medical or surgical mask. However, up to 60% of KN95 masks are counterfeit, do not meet NIOSH standards and offer lower levels of respiratory protection than advertised. The CDC provides [respirator assessment results](#) for KN95 and other respirators by manufacturer and model, including some KN95s that have received emergency use authorization from the FDA.

Procuring NIOSH-approved N95 respirators

NIOSH-approved N95 respirators can generally be purchased through usual PPE supply channels. Small, independent primary care practices can contact the [NYC REACH Program](#) to check eligibility and learn about emergency PPE assistance from the NYC PPE Service Center. Congregate residential settings may be eligible to procure N95 respirators and other PPE through the PPE Service Center. Email PPESupport@health.nyc.gov with any questions about eligibility or how to access PPE.

Sources for NIOSH-approved N95 respirators and other PPE:

- [Personal Protective Equipment and Medical Supply Companies](#)
- [NYC PPE + Reopening Supplies Marketplace](#)

Use N95 respirators as part of a comprehensive RPP

An RPP is a written program, required by the [Occupational Safety and Health Administration \(OSHA\) Respiratory Protection Standard](#), that includes procedures specific to the workplace — in this case, health care or congregate residential settings, to protect HCP and other staff from inhaling harmful contaminants. A clinical director or other facility designee with experience in infection prevention and control (IPC) should oversee the RPP. A risk assessment should be conducted to determine the level of respiratory protection needed by HCP and other staff according to their potential exposure. For questions or support about establishing an RPP, the NYC Health Department’s Congregate Settings Investigation and Response Unit (CSIRU) infection prevention team can be contacted at IPC@health.nyc.gov. Important components of an RPP include:

- **Respirator selection:** The risk assessment will guide selection of NIOSH-approved respirators, considering facility- and role-specific risk factors.

- **[Medical evaluation](#)**: HCP and congregate setting staff should have a medical evaluation and be fit tested for the N95 respirator they will be using.
- **[Fit testing](#)**: A fit test is conducted to verify that a respirator is both comfortable and correctly fits on an HCP or other staff. Fit testing is required annually and after any physical changes that may affect respirator fit, such as weight loss or dental work.
- **[Training](#)**: Training should include respiratory hazards HCP and other staff may potentially be exposed to during routine and emergency situations, proper use of respiratory PPE (including putting on and removing as well as any limitations on their use), and the care, maintenance and disposal of respirators.
- **[Program evaluation](#)**: An RPP should be evaluated for effectiveness on an annual basis.

OSHA respiratory protection program resources:

- [Respiratory Protection Guidance and Standards](#)
- [Respiratory Protection Training Videos](#)
- [Respiratory Protection Guidance for the Employers of Those Working in Nursing Homes, Assisted Living, and Other Long-Term Care Facilities During the COVID-19 Pandemic](#)
- [Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace](#)

CDC and NIOSH respiratory protection program resources:

- [Healthcare Respiratory Protection Resources](#)

Other respiratory protection program resources:

- [Training Videos and Slides: RPP Awareness and Toolkit by Community Health Care Association of New York State Emergency Management](#)
- [Respiratory Protection Program Template by the Minnesota Department of Health](#)

Fit testing information and resources

A fit test should be conducted by a trained HCP to confirm the respirator forms a tight seal on the wearer's face before it is used. Vendors specializing in occupational or environmental health can supply fit testing kits, training or services at your facility (see [Appendix: Resources for fit testing](#)). It is important to note that [facial hair interferes with the seal](#) and some HCP may not be able to be fit tested due to this. In some settings, a loose-fitting respirator, such as a [powered air-purifying respirator or PAPR](#) (where a hood or helmet is designed to form only a partial seal with the wearer's face), is an option for HCP who have facial hair. Once a fit test has been done to determine the best respirator model and size for a particular user, a user seal check should be performed every time the respirator is worn to make sure an adequate seal is achieved.

CDC and NIOSH fit testing resources:

- [Summary of Respirator Fit Test Requirements](#)
- [Frequently Asked Questions about Respiratory Protection: Fit Testing](#)
- [Facial Hairstyles and Filtering Facepiece Respirators](#)

CDC, NIOSH and OSHA user seal check resources:

- [CDC Publication on How to Perform a User Seal Check](#)
- [OSHA Video on How to Perform a User Seal Check](#)

For questions about fit testing or to seek technical assistance to support infection prevention, please reach out to the NYC Health Department's CSIRU infection prevention team at IPC@health.nyc.gov.

Appendix: Resources for fit testing

Below is a list of vendors that provide fit testing services using a train-the-trainer model (trained HCP perform fit testing for their peers), mobile testing (the vendor conducts fit testing at your facility) or on-site testing (facility staff travel to the vendor). The list is neither exclusive nor exhaustive. The NYC Health Department is providing this information to assist with locating services but does not make any representation or warranty concerning the quality or accuracy of any of the vendor's services.

Company	Services	Contact Information	Website
Mobile Health	<ul style="list-style-type: none"> On-site fit testing Train-the-trainer (fit kit) 	212-695-5122	mobilehealth.net
ATC Group Services	<ul style="list-style-type: none"> Mobile fit testing RPP development 	212-353-8280	atcgroupservices.com
TRC	Mobile and on-site fit testing	<ul style="list-style-type: none"> 860-298-9692 asignona@trccompanies.com 	trccompanies.com
Omega Environmental Services	<ul style="list-style-type: none"> Mobile fit testing Train-the-trainer 	201-489-8700 (ask for the fit testing director)	omega-env.com
Emilcott	<ul style="list-style-type: none"> Mobile fit testing Train-the-trainer 	973-538-1110	emilcott.com
BSI	<ul style="list-style-type: none"> Mobile fit testing Train-the-trainer 	<ul style="list-style-type: none"> 212-290-6323 charles.cortalano@bsigroup.com 	bsigroup.com
The Rising Workplace	<ul style="list-style-type: none"> Mobile fit testing Train-the-trainer 	<ul style="list-style-type: none"> 828-214-7827 connect@risingworkplace.com 	risingworkplace.com
PHS Mobile Health Solutions	Mobile fit testing	973-694-2893	phsmobile.com
ShowMeCPR	Mobile fit testing	<ul style="list-style-type: none"> 973-694-2893 info@showmecpr.com 	showmecpr.com
Respclearance	Train-the-trainer (online course)	800-934-0752	respclearance.com
Partners in Safety	Mobile fit testing	<ul style="list-style-type: none"> 212-727-8637 (extension 107) jskeeter@partnersinsafety.com 	partnersinsafety.com
CPR Course International	Mobile fit testing	800-385-4277	cprcourses.org

The NYC Health Department may change recommendations as the situation evolves.