



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 in 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.

HCP working in counties with substantial or high transmission should use NIOSH-approved N95s if performing high-risk procedures or to simplify implementation. 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 and 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.

Source control: Use of respirators, well-fitting face masks or well-fitting cloth masks to cover a person's mouth and nose to prevent spread of respiratory secretions when they are breathing, talking, sneezing or coughing. Source control devices should not be placed on children younger than age 2, anyone who cannot wear one safely (such as someone who has a disability or an underlying medical condition that precludes wearing one safely), or anyone who is unconscious, incapacitated or otherwise unable to remove their source control device without assistance. Face shields alone are not recommended for source control.

Cloth mask: Textile (cloth) covers that are intended primarily for source control in the community. **They are not PPE appropriate for use by health care personnel.** Guidance on design, use and maintenance of cloth masks is available at [cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/masks.html](https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/masks.html).

Face mask: The Occupational Safety and Health Administration (OSHA) defines face masks as "a surgical, medical procedure, dental, or isolation mask that is [cleared by the Food and Drug Administration (FDA)], authorized by an FDA EUA, or offered or distributed as described in an FDA enforcement policy. Face masks may also be referred to as 'medical procedure masks.'"¹ Face masks should be used according to product labeling and local, state and federal

¹Occupational Safety and Health Standards, 1910.502 - Healthcare. Occupational Safety and Health Administration. Published June 21, 2021. <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.502>

requirements. FDA-cleared surgical masks are designed to protect against splashes and sprays and are prioritized for use when such exposures are anticipated, including surgical procedures. Other face masks, such as some procedure masks, which are typically used for isolation purposes, may not provide protection against splashes and sprays.

Respirator: A respirator is a personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer’s risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases or vapors. Respirators are certified by the CDC and NIOSH, including those intended for use in health care.

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.² 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. To see examples of counterfeit respirators and NIOSH-approval misrepresentation, visit [cdc.gov/niosh/npptl/usernotices/counterfeitResp.html](https://www.cdc.gov/niosh/npptl/usernotices/counterfeitResp.html).

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.

Description of Elastomeric Respirators

Elastomeric respirators include half- 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.

²Rengasamy S, King WP, Eimer BC, et al. 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.

Scenarios When NIOSH-approved, Fit-tested N95 Respirators Are Recommended

Even after HCP and congregate residential setting staff are up to date with all recommended COVID-19 vaccine doses,³ it is recommended they continue to use NIOSH-approved N95 (or equivalent or higher level) respirators plus a gown, gloves and eye protection (face shield or goggles) when entering the room of a patient who has confirmed or suspected COVID-19⁴.

If working in counties with substantial or high transmission, the same PPE is recommended in the following scenarios:

- When performing any procedures that may generate aerosols⁵ (for example, nebulizer treatments) with any people (including those not known or suspected to have COVID-19)
- When performing surgical procedures that may pose higher risk for transmission if a patient has COVID-19 — this includes procedures generating potentially infectious aerosols or involving areas where viral loads might be higher (such as the nose, throat or respiratory tract)
- When working in situations with additional risk factors for transmission, such as an individual unable to use source control or being in an area that is poorly ventilated
- When there is health-care-associated SARS-CoV-2 transmission, and universal respirator use by HCP working in affected areas is not already in place

To simplify implementation, facilities in counties with substantial or high transmission may consider implementing universal use of NIOSH-approved N95 or equivalent or higher-level respirators for HCP during all patient care encounters or in specific units or areas of the facility at higher risk for SARS-CoV-2 transmission.

For HCP and other congregate setting staff with prolonged contact with people in congregate residential settings, recommended PPE includes a NIOSH-approved N95 or equivalent or higher-level respirator when caring for residents in health care settings. If respirators are not available, HCP and other congregate setting staff must use a well-fitting face mask. If staff can complete their tasks and remain at least 6 feet from the resident with suspected or confirmed COVID-19, such as leaving a tray outside of a resident's door, PPE can consist of disposable gloves and a face mask.

Other long-term care settings (excluding nursing homes) whose staff provide nonskilled personal care similar to that provided by family members in the home (for example, many assisted living or group homes) should follow **community prevention strategies based on**

³People are considered up to date with their COVID-19 vaccines when they have completed a COVID-19 vaccine primary series and got the most recent booster dose recommended for them by CDC.

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

⁵Clinical Questions about COVID-19: Questions and Answers – Infection Control. Centers for Disease Control and Prevention. Updated September 26, 2022. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html#Infection-Control>

COVID-19 Community Levels, similar to independent living communities, retirement communities or other non-health-care congregate settings.

KN95 Respirators

KN95 respirators 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 respirators 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, KN95s are designed to standards that do not often have a quality requirement, and use of a poor-quality products may not provide the level of protection indicated.

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 (visit [nycreach.org](https://www.nyc.gov/nycreach)) 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.

For sources of NIOSH-approved N95 respirators and other PPE, read Personal Protective Equipment and Medical Supply Companies (available at [nyc.gov/assets/doh/downloads/pdf/imm/covid-19-ppe-suppliers.pdf](https://www.nyc.gov/assets/doh/downloads/pdf/imm/covid-19-ppe-suppliers.pdf)).

Use N95 Respirators as Part of a Comprehensive RPP

An RPP is a written program, required by the OSHA Respiratory Protection Standard (available at [osha.gov/laws-regs/regulations/standardnumber/1910/1910.134](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134)), 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 that 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.

The following are OSHA respiratory protection program resources:

- Respiratory Protection Guidance and Standards ([osha.gov/respiratory-protection](https://www.osha.gov/respiratory-protection))
- Respiratory Protection Training Videos ([osha.gov/respiratory-protection/training](https://www.osha.gov/respiratory-protection/training))
- 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 ([osha.gov/sites/default/files/respiratory-protection-covid19-long-term-care.pdf](https://www.osha.gov/sites/default/files/respiratory-protection-covid19-long-term-care.pdf))
- Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace ([osha.gov/coronavirus/safework](https://www.osha.gov/coronavirus/safework))

For CDC and NIOSH respiratory protection program resources, read Healthcare Respiratory Protection Resources (available to [cdc.gov/niosh/nppt/hospresptoolkit/training.html](https://www.cdc.gov/niosh/nppt/hospresptoolkit/training.html)).

The following are other respiratory protection program resources:

- Training Videos and Slides: RPP Awareness and Toolkit by Community Health Care Association of New York State Emergency Management (chcanys.info/post/materials-available-respiratory-protection-awareness-training-for-ny-community-health-centers)
- Public Health Respiratory Protection Program Template by the Minnesota Department of Health (health.state.mn.us/facilities/patientsafety/infectioncontrol/rpp/template/index.html)

Fit Testing Information and Resources

A fit test should be conducted by 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** on Page 7). 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** (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.

The following are CDC and NIOSH fit testing resources:

- Summary of Respirator Fit Test Requirements ([cdc.gov/niosh/npptl/pdfs/n95info2-2015-508.pdf](https://www.cdc.gov/niosh/npptl/pdfs/n95info2-2015-508.pdf))
- Frequently Asked Questions about Respiratory Protection: Fit Testing ([cdc.gov/niosh/docs/2018-129/pdfs/2018-129.pdf](https://www.cdc.gov/niosh/docs/2018-129/pdfs/2018-129.pdf))
- Facial Hairstyles and Filtering Facepiece Respirators ([cdc.gov/niosh/npptl/pdfs/FacialHairWmask11282017-508.pdf](https://www.cdc.gov/niosh/npptl/pdfs/FacialHairWmask11282017-508.pdf))

The following are CDC, NIOSH and OSHA user seal check resources:

- Filtering out Confusion: Frequently Asked Questions about Respiratory Protection ([cdc.gov/niosh/docs/2018-130/pdfs/2018-130.pdf?id=10.26616/NIOSH PUB2018130%22](https://www.cdc.gov/niosh/docs/2018-130/pdfs/2018-130.pdf?id=10.26616/NIOSH PUB2018130%22))
- OSHA Video on How to Perform a User Seal Check ([youtube.com/watch?v=pGXiUyAoEd8](https://www.youtube.com/watch?v=pGXiUyAoEd8))

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

Appendix: Resources for Fit Testing

The following 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. 1.5.23