INSTRUCTIONS FOR THIS TEMPLATE

- The purpose of this template is to assist health care facilities in Iowa that provide training and fit testing for employees who are required to wear tight-fitting respirators.
- Respiratory Protection Program Administrators can use these slides and scripts to customize training specifically for their organization.
- A Respirator Training Outline and Active Learning Worksheet can also be customized for your organization and given to employees to complete during their respirator training.
- Program Administrators should fully understand the content and resources provided in this presentation before training employees.

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IOWA DEPARTMENT OF HEALTH AND HUMAN SERVICES

- The Iowa Department of Health and Human Services (Iowa HHS) is not a regulatory agency.
- This template is intended as an educational resource and guidance document only. If the end user adapts this template for their Respiratory Protection Program, it is their responsibility to ensure all content and referenced sources are current and relevant for their specific setting.
- Any specific questions on meeting safety and regulatory mandates should be directed to the appropriate regulatory authority for that specific workplace setting and not the Iowa HHS.
- To contact Iowa's Occupational Safety and Health Administration, visit Iowa OSHA.

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PROJECT FIRSTLINE

Funding for this resource was made available through Project Firstline. Project Firstline is a national collaborative led by the U.S. Centers for Disease Control and Prevention (CDC) to provide infection control training and education to frontline health care workers and public health personnel. The Iowa HHS is proud to partner with Project Firstline, as supported through the 2021 Cooperative Agreement. CDC is an agency within the Federal Department of Health and Human Services (HHS). The contents of this PowerPoint presentation do not necessarily represent the policies of CDC or HHS and should not be considered an endorsement by the Federal Government.

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Respirator Training

For health care workers in Iowa wearing tight-fitting respirators

The Center for Food Security & Public Health
Iowa State University

Iowa HHS

Welcome!

- I am [INSERT NAME], our Respiratory Protection Program Administrator

[INSERT PICTURE OF YOURSELF OR YOUR ORGANIZATION]

Today’s main learning objectives

Before you can wear a respirator, you must be able to:

1. Explain how a respirator protects its user
2. Discuss when and why fit testing is needed
3. Describe how to use a respirator

Presentation outline

- Why the respirator is needed
- What the respirator does and does not do
- When and how to use a respirator
- What fit testing is
- How to store and maintain the respirator
- How improper use can reduce the respirator’s abilities
- How to use a respirator in unexpected situations
- How to recognize signs and symptoms that may limit or prevent effective use of respirators

Why is the respirator needed?

Occupational hazards

Ergonomic	Physical	Chemical	Biological
• Heavy lifting • Repetitive motions	• Radiation • Needle sticks	• Disinfectants • Medications	• Infectious diseases • Toxins

Source: OSHA (https://www.osha.gov/healthcare#:~:text=They%20include%20bloodborne%20pathogens%20and,material%20and%20x%2Dray%20hazards.) and NIOSH (https://www.cdc.gov/niosh/topics/healthcare/default.html)

Biological hazards

Biological

- Infectious diseases
- Toxins

Germs are everywhere

Source: CDC (https://www.cdc.gov/infectioncontrol/projectfirstline/healthcare/where-germs-live.html)

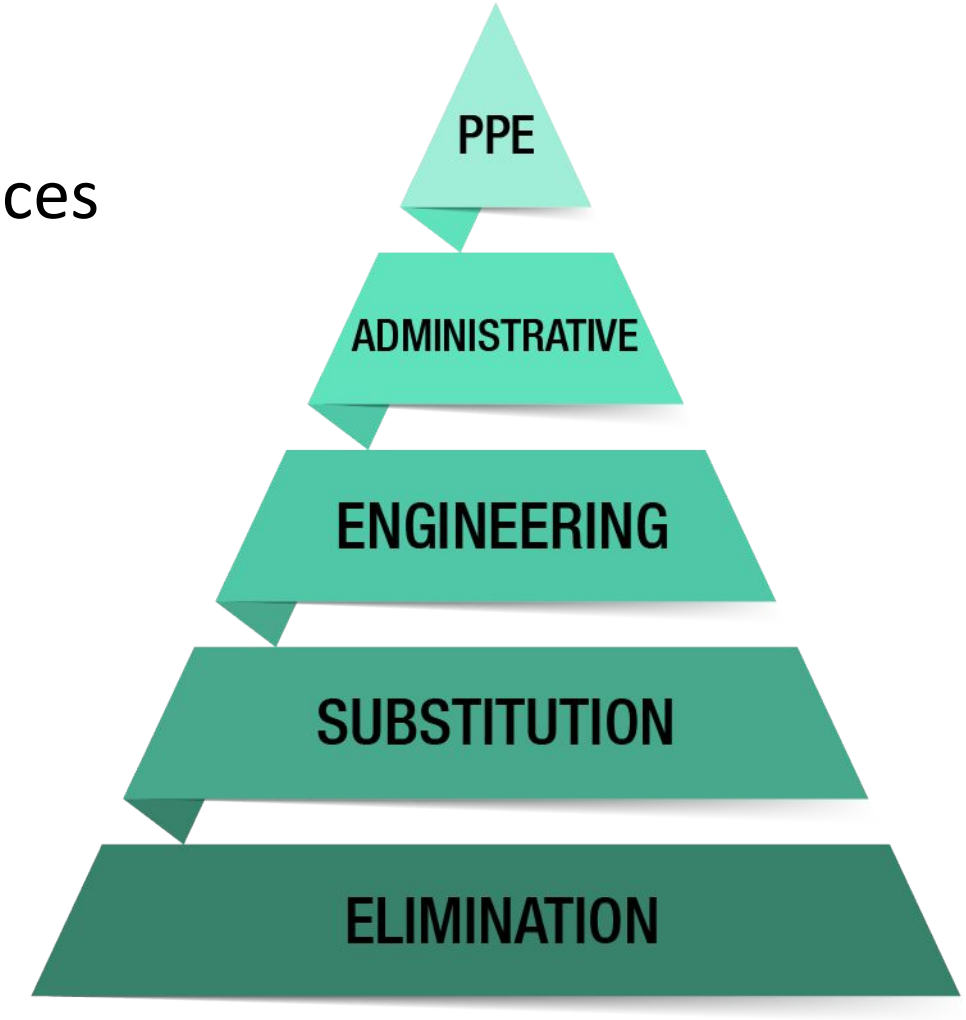
Respiratory system pathways

- Breathing in germs in respiratory droplets or in the air
- Getting splashes or sprays into our eyes, nose, or mouth
- Spreading germs in the nose and mouth to the skin and hands after touching the face
- Bypassing the body's natural defenses through procedures or surgeries

Source: CDC (https://www.cdc.gov/infectioncontrol/projectfirstline/healthcare/germs-body.html)

Protecting employees in the workplace

1) Federal Regulations
2) Infection Control Practices



Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/topics/hierarchy/default.html)

OSHA – Employer's responsibilities

- Written respiratory protection program with policies and procedures
- Designation of a program administrator
- Procedures for hazard evaluation and respirator selection
- Medical evaluation of respirator wearers
- Training
- Fit testing procedures for tight-fitting respirators
- Procedures for proper use, storage, maintenance, repair, and disposal of respirators
- Program evaluation including consultation with employees
- Recordkeeping

Source: OSHA (https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134)

OSHA – Employee's responsibilities

Your responsibilities include:

- Complete the medical evaluation
- Complete respirator training
- Complete the fit test
- Use your respirator the way you were trained
- Replace your respirator as needed
- Repeat the medical evaluation, training, and fit test when needed
- Contact [INSERT YOUR NAME] if you have questions

Source: OSHA (https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134)

Goal of infection control

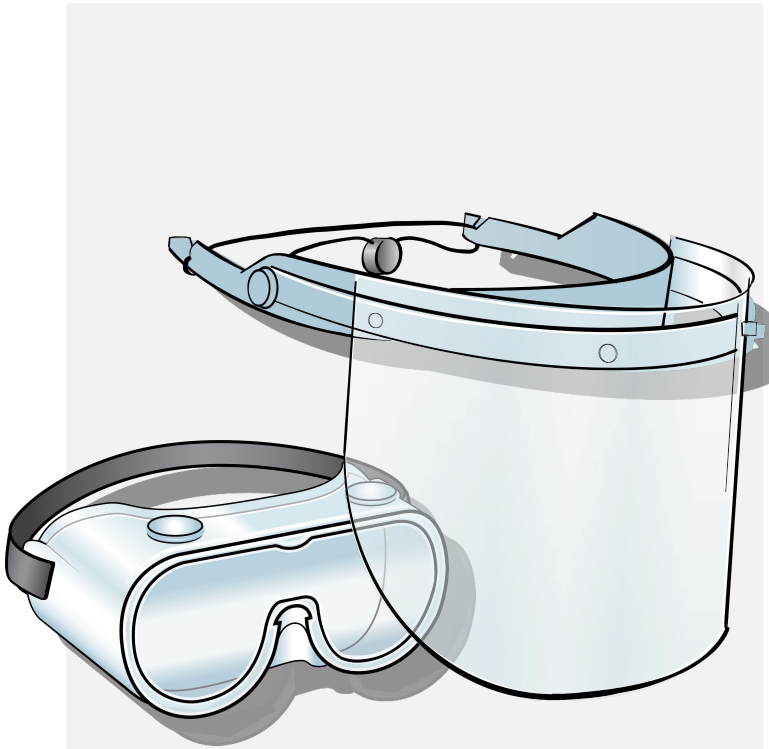
Image Source: CDC (https://phil.cdc.gov/details.aspx?pid=11161)
Content Source: CDC (https://www.cdc.gov/infectioncontrol/projectfirstline/videos/Ep4-Droplet-LowRes-New.mp4)

Infection control practices to reduce risk

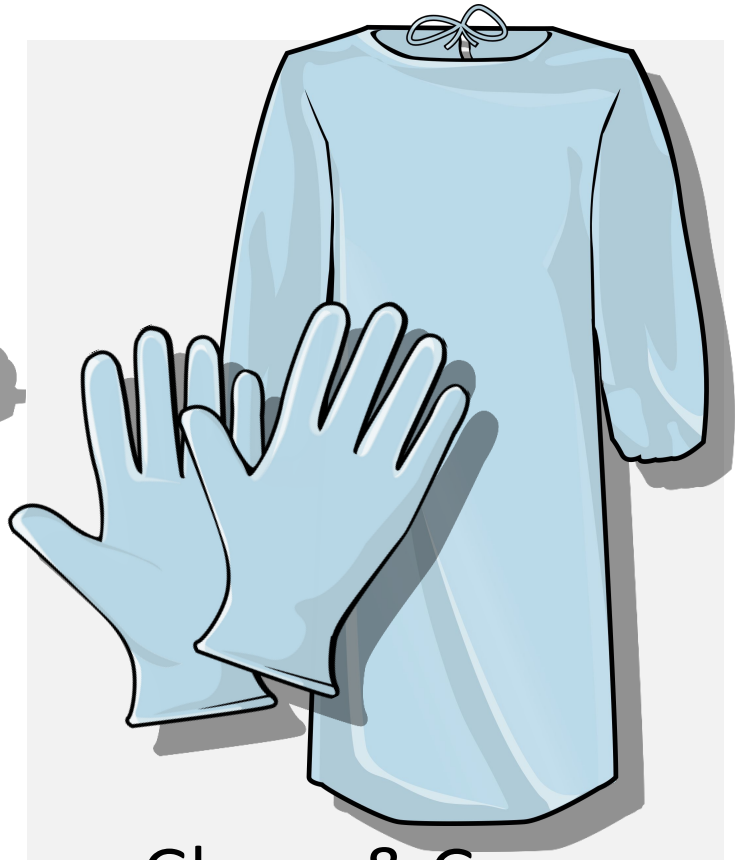
- Hand hygiene
- Respiratory hygiene
- Cleaning and disinfection
- Ventilation
- Source control
- Personal protective equipment (PPE)

Image Source: CDC (https://www.cdc.gov/infectioncontrol/projectfirstline/resources.html)
Content Source: CDC (https://www.cdc.gov/infectioncontrol/pdf/projectfirstline/Healthcare-Germs-Body-RespiratorySystem-508.pdf)

Personal Protective Equipment (PPE)



Eye Protection



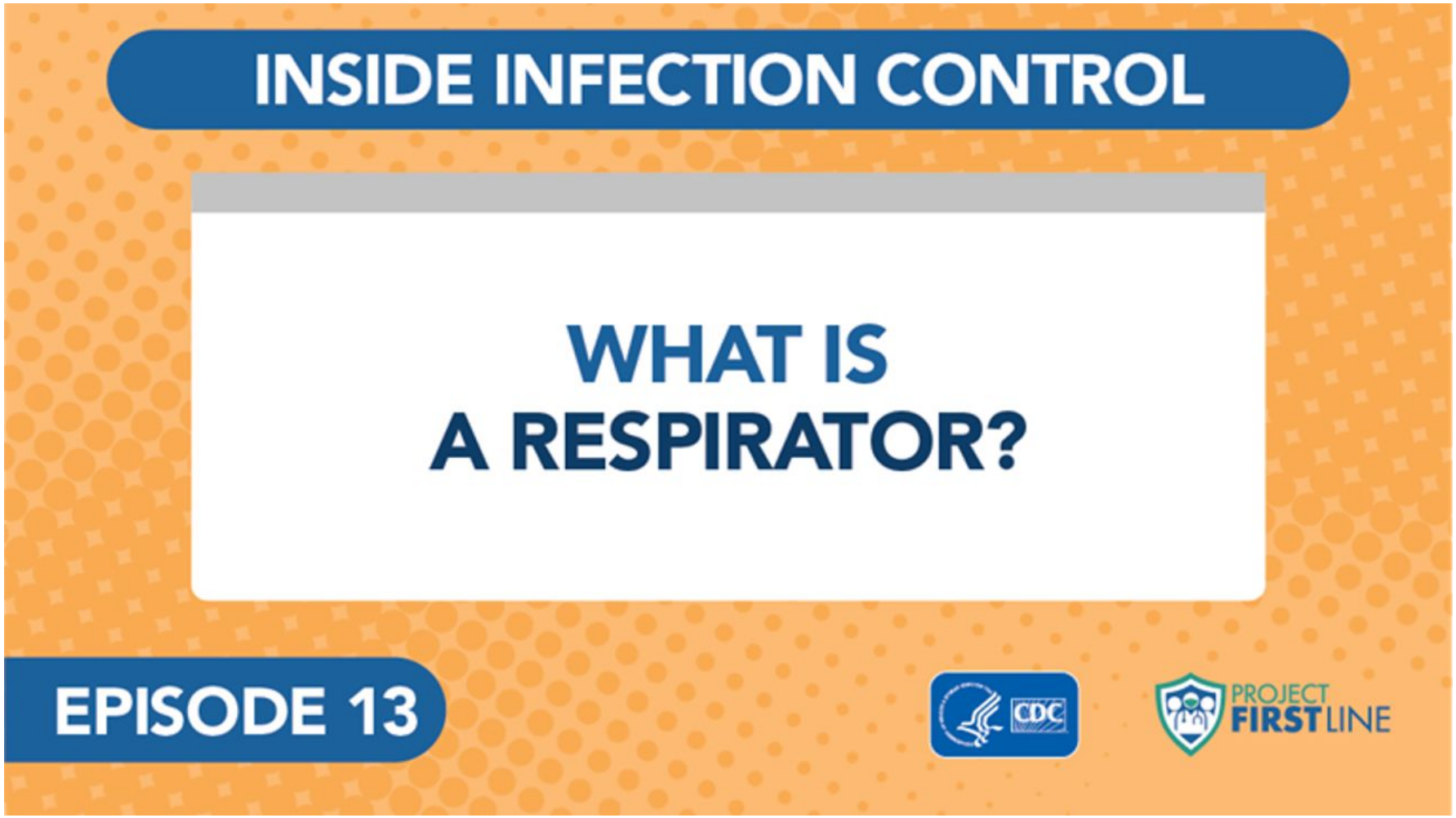
Gloves & Gown

Respirator

Image Source: CDC (https://www.cdc.gov/infectioncontrol/ppt/PFL-T7-60min-Slides.pptx)
Content Source: CDC (https://www.cdc.gov/infectioncontrol/ppt/PFL-T11-10min-RespiratorsAndN95s-Slides.pptx)

What do respirators do?

Respirators



Source: CDC (https://www.cdc.gov/infectioncontrol/projectfirstline/videos/EP13-Respirator-LowRes.mp4)

Types and uses for respiratory protection

Type of mask				
Name	Face covering	Surgical mask	Filtering Facepiece Respirator (FFR)	Air Purifying Respirator (APR)
Common example	Handmade cloth mask	Disposable 3-ply ASTM F3502-21	N95 respirator	Powered APR (PAPR)
Is it tight-fitting?	No	No	Yes	Sometimes
What is an example of when it should be used?	Close contact with someone outside of a health care setting during high risk of COVID-19 community transmission	Close contact with a patient with suspected seasonal influenza	Close contact with a patient with an infectious disease requiring airborne precautions (e.g., measles)	Close contact with a patient with suspected infectious disease requiring droplet precautions (e.g., pertussis) when a FFR is not tolerated by the user

Image Source: CFSPH

Primary Content Source: NIOSH (https://www.cdc.gov/niosh/docs/2015-117/pdfs/2015-117revised042022.pdf?id=10.26616/NIOSHPUB2015117)

N95 respirator benefits and limitations

What N95s do

- Tight-fitting respirator
- Filters out 95% of the hazardous particles in the air

What N95s do not do

- Will not protect you if it does not fit correctly
- Does not provide oxygen
- Does not protect you from vapors or gases
- Does not protect you if oil is in the air

Image Source: CDC (https://phil.cdc.gov/Details.aspx?pid=15482)
Primary Content Source: NIOSH (https://www.cdc.gov/niosh/docs/2015-117/pdfs/2015-117revised042022.pdf?id=10.26616/NIOSHPUB2015117)

N95 respirators and FFR alternatives

Minimum filter efficiency	N Series (not resistant to oil)	R Series (somewhat resistant to oil)	P Series (strongly resistant to oil)
95%	N95	R95	P95
99%	N99	R99	P99
100% (99.97%)	N100	R100	P100

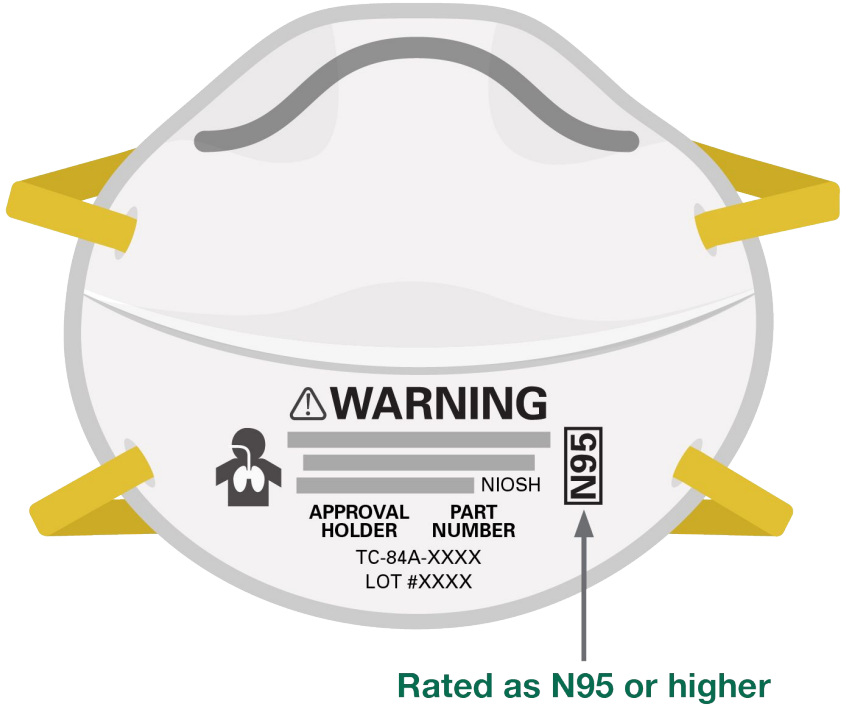
Source: NIOSH (https://www.cdc.gov/niosh/docs/2015-117/pdfs/2015-117revised042022.pdf?id=10.26616/NIOSHPUB2015117)

Selecting N95 respirators

- Avoid counterfeit products that may not protect you properly
- Visit NIOSH-Approved N95s to search for specific products
- Look for particular features on your N95 respirator each time you use it

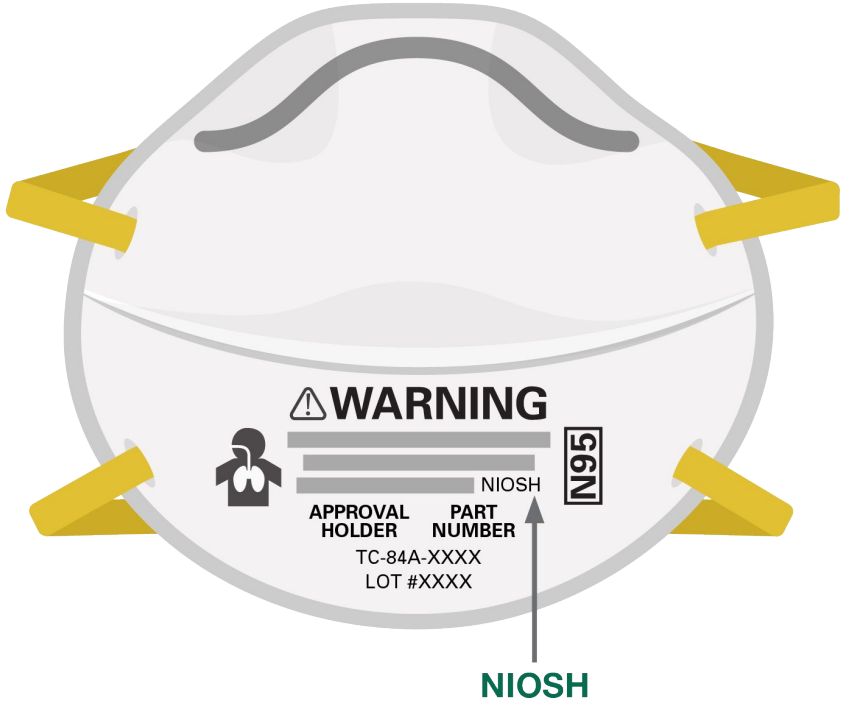
Image Source: CDC (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/types-of-masks.html)
Content Source: NIOSH (https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/n95list1.html)

N95 rating or higher



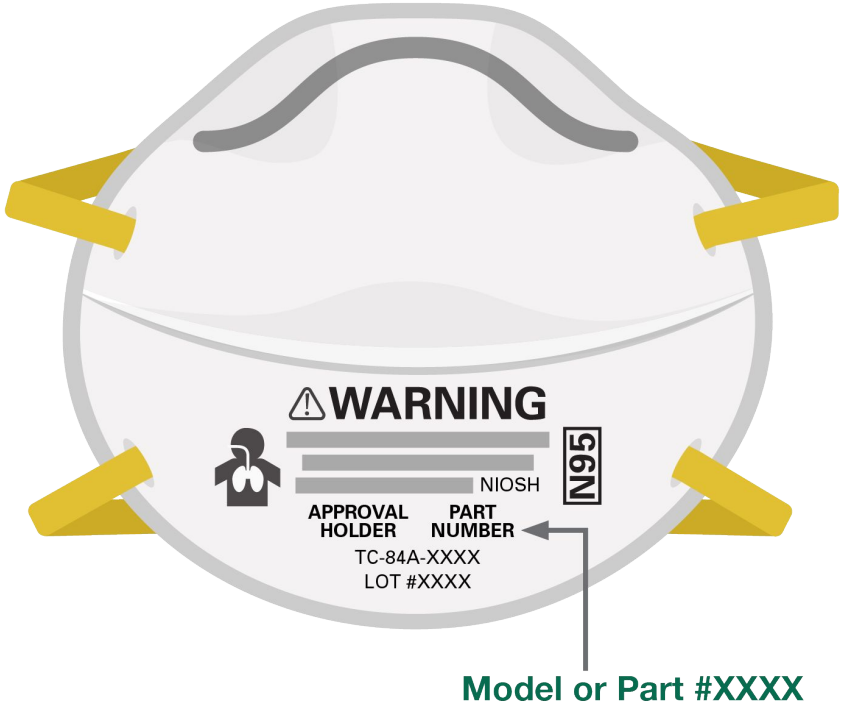
Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

NIOSH in capital block letters



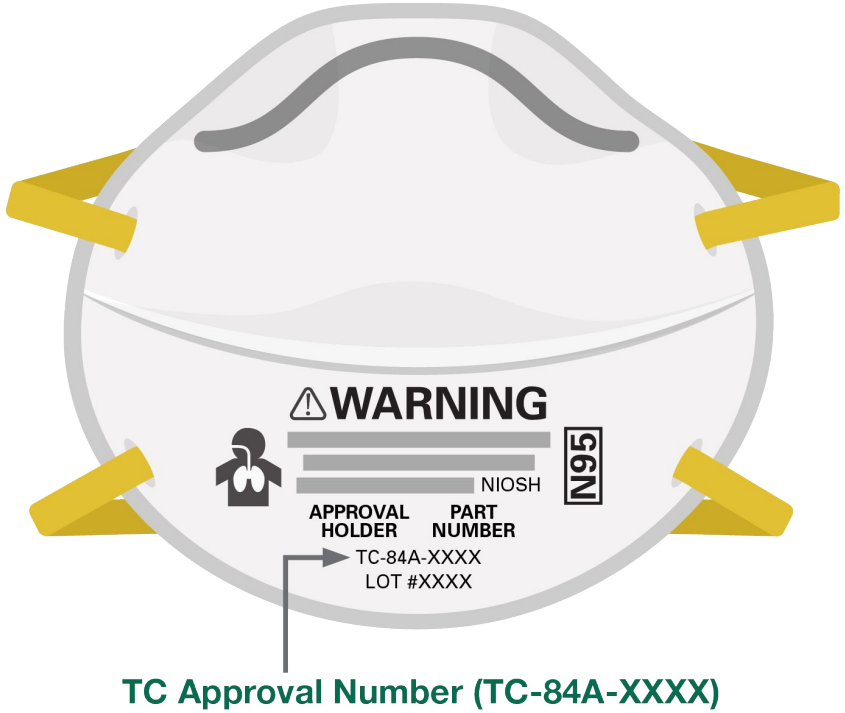
Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

Model, part, or lot number



Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

TC-Approval number

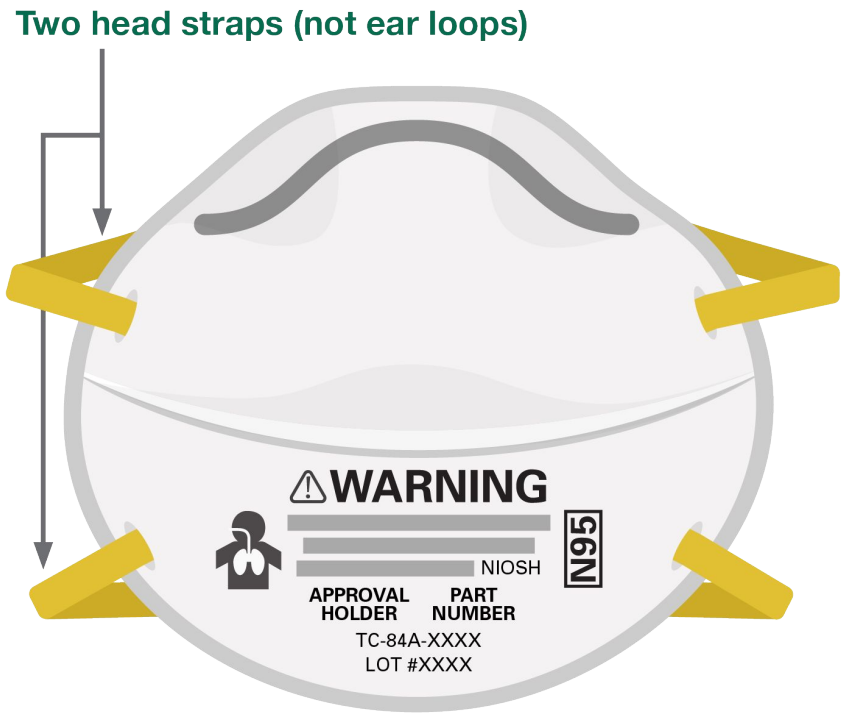


Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

Name or logo of approval holder

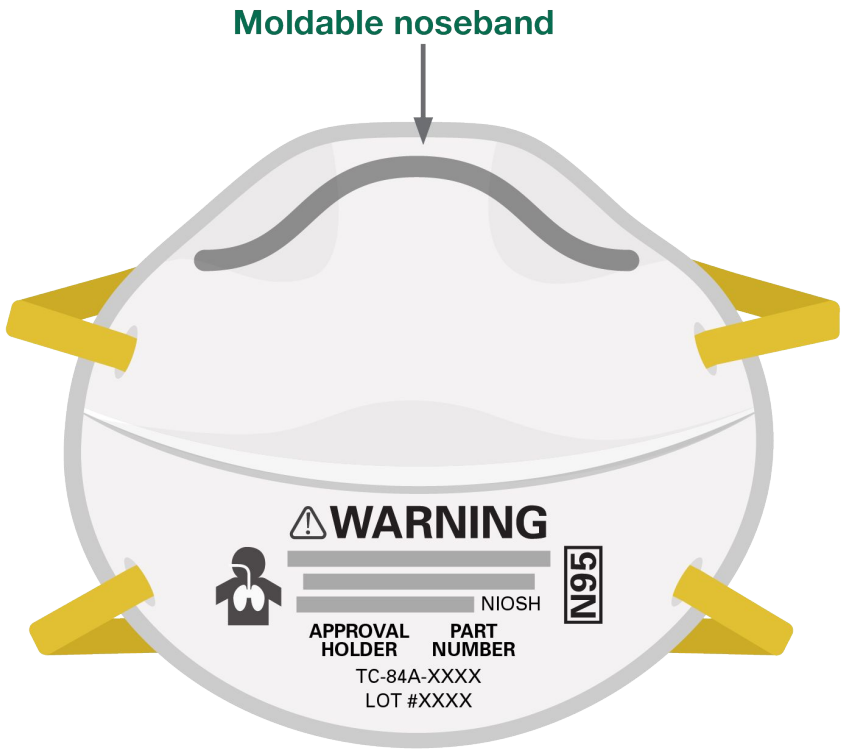
Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

Two head straps, not ear loops



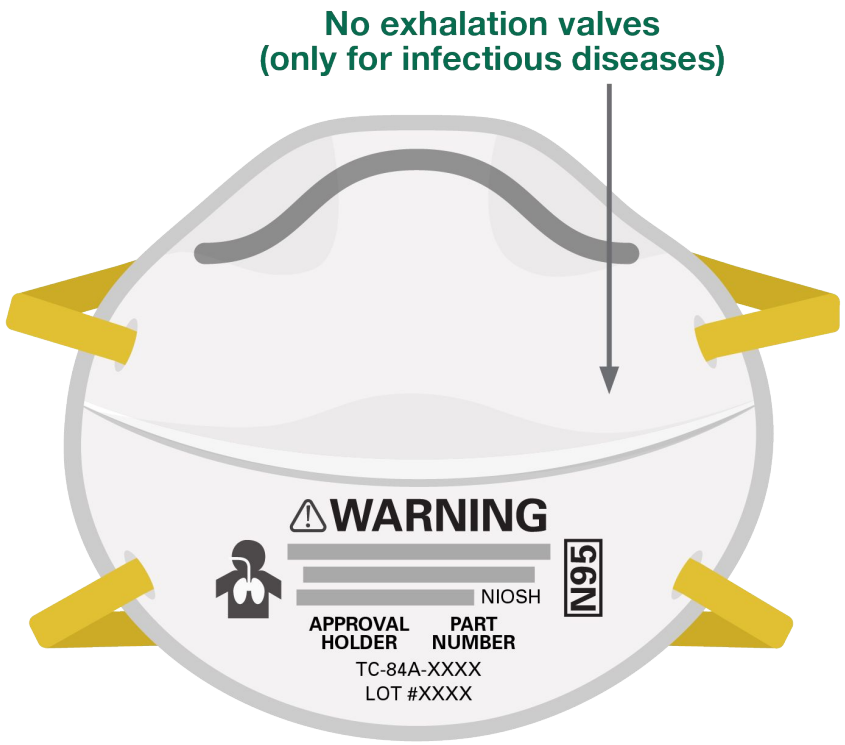
Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

Moldable noseband



Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

No exhalation valves



Source: CFSPH (modified from NIOSH at https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/default.html)

When and how is a respirator used?

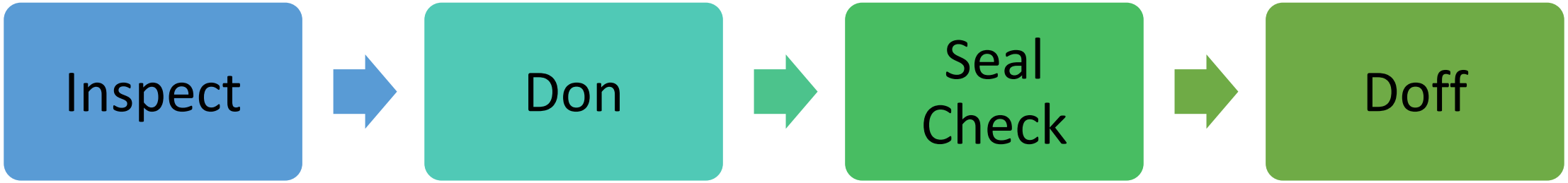
When to wear a respirator

Examples of when you should use a respirator include:

- Bathing, dressing, or toileting patients or residents suspected or known to be infected with an infectious respiratory disease
- Performing cleaning or maintenance duties in a room occupied by someone with confirmed or suspected respiratory illness
- Performing aerosol-generating procedures (like open suctioning of airways)
- [INSERT OTHER TASKS]

Primary Source: NIOSH (https://www.cdc.gov/niosh/docs/2015-117/pdfs/2015-117revised042022.pdf?id=10.26616/NIOSHPUB2015117)

How to use a respirator



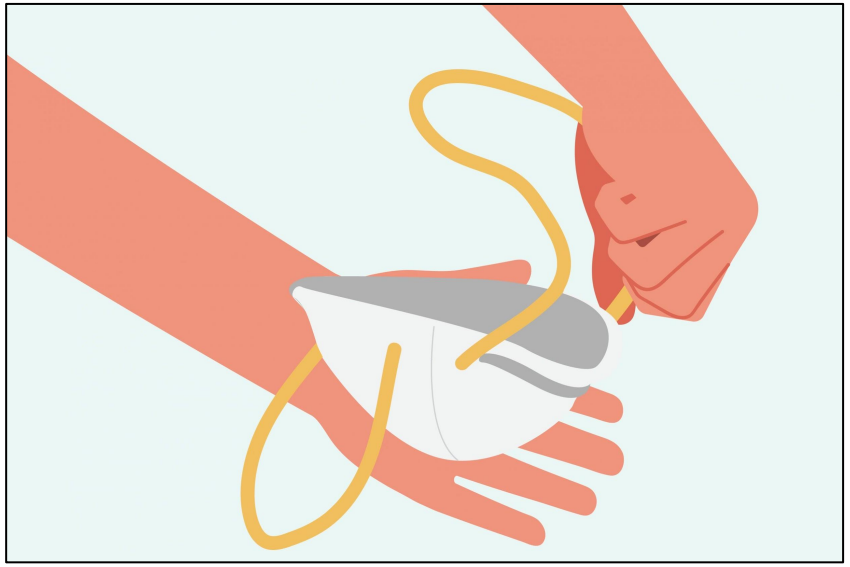
Primary Source: CDC (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/use-n95-respirator.html)

Inspecting a respirator

Ask yourself these questions every time you use your respirator:

1. If it is individually wrapped, is the wrapper torn or taped together?
2. Is there any dirt, stains, tears, or wetness?
3. Are the straps loosely attached?

If YES to any of these questions –
get a new respirator!



Source: CDC (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/use-n95-respirator.html)

Donning a respirator

Source: CDC (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/use-n95-respirator.html)

Considerations when wearing a respirator

- If your respirator has an exhalation valve, check with [INSERT NAME] first to find out if and when it can be used in our health care facility
- If you wear glasses, safety glasses, or a face shield – be sure the legs of the eyewear go over the respirator straps (not under)
- If you wear a head covering (such as a skullcap or hijab), the respirator straps must be on your hair, not the head cover

IMPORTANT!
Your respirator must be directly on your skin and its straps must be directly on your hair or scalp.

Primary Source: Wisconsin State Laboratory of Hygiene (https://uwmadison.app.box.com/s/cb5ojnpv86qayzisgd6f4kmxrfsjcqft)

Checking a respirator’s seal

Source: CDC (https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/use-n95-respirator.html)

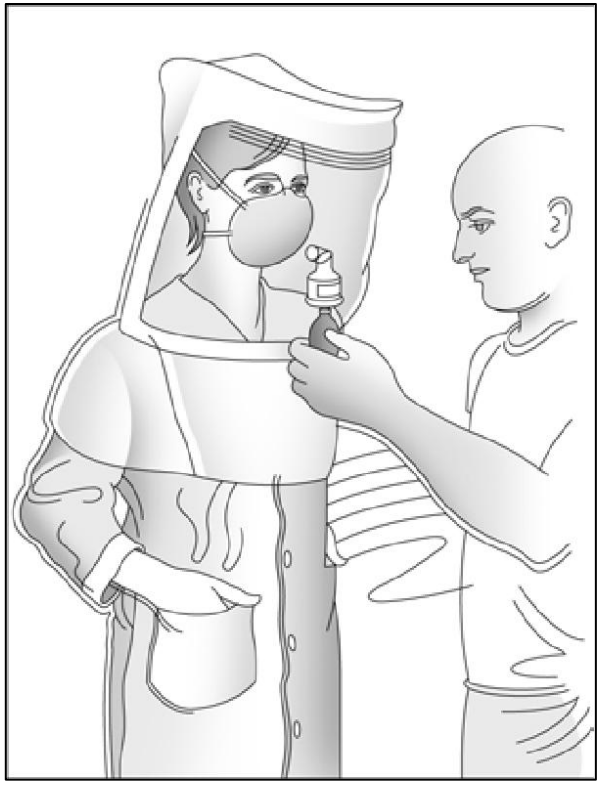
Doffing a respirator

Source: OSHA (https://www.youtube.com/watch?v=Tzpz5fko-fg)

What is fit testing?

Fit testing

Qualitative



Quantitative

Source: OSHA (https://www.osha.gov/sites/default/files/publications/3384small-entity-for-respiratory-protection-standard-rev.pdf)

Why fit testing is needed

- A fit test makes sure your respirator is protecting you from harmful things like germs, dust, and chemicals.
- The fit test also helps us know your body is tolerating the respirator.

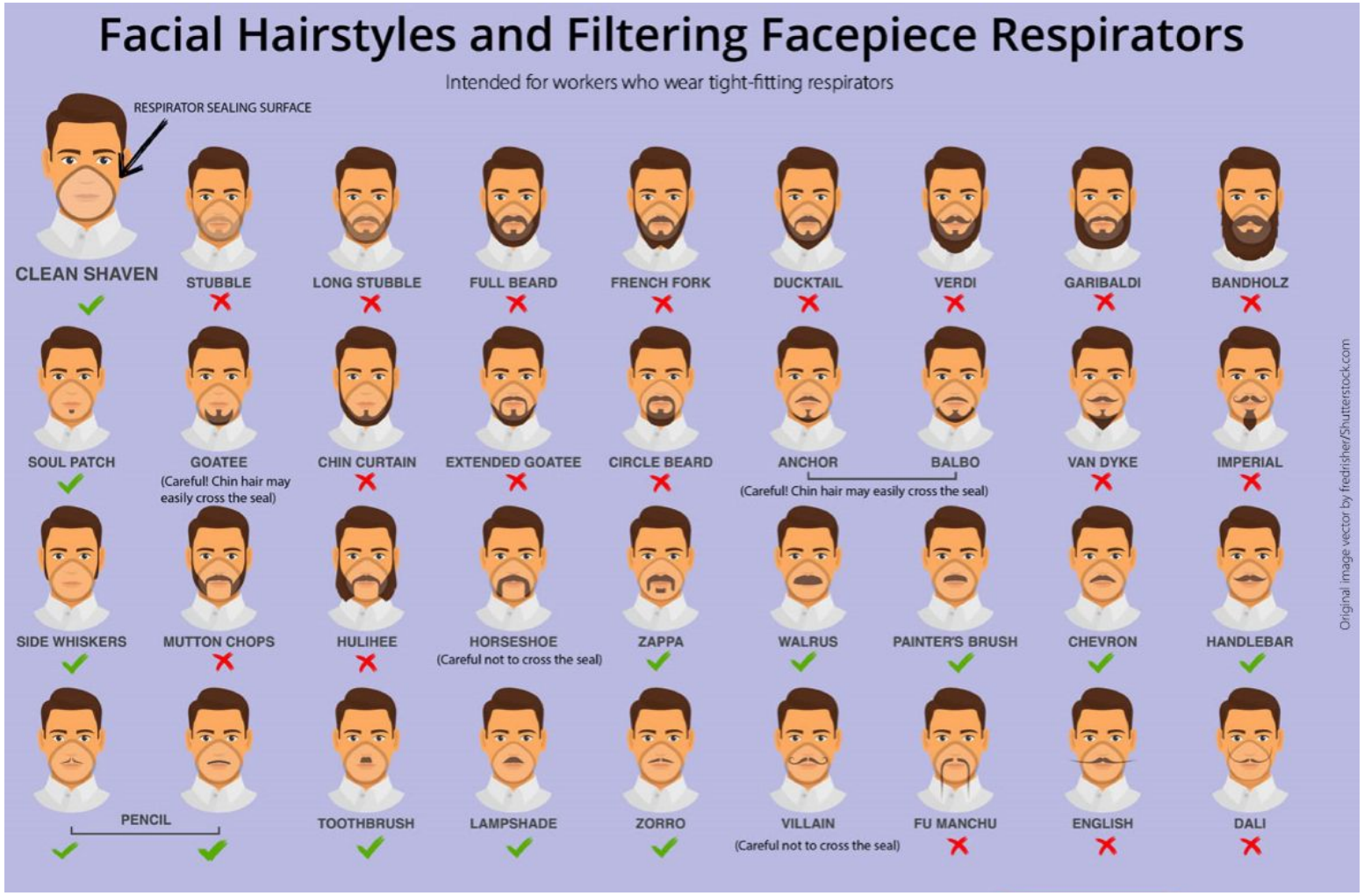
Source: OSHA (https://www.osha.gov/sites/default/files/publications/3384small-entity-for-respiratory-protection-standard-rev.pdf)

Who should be fit tested

- Fit testing is needed for anyone who must wear a tight-fitting respirator in the workplace to protect them from respiratory hazards.
- Fit testing may not be performed in some situations:
  - Surgical masks
  - Loose-fitting respirators (like some PAPRs)
  - Persons with certain medical conditions
  - Persons with certain kinds of facial hair (see next slide)

Source: OSHA (https://www.osha.gov/sites/default/files/publications/3384small-entity-for-respiratory-protection-standard-rev.pdf)

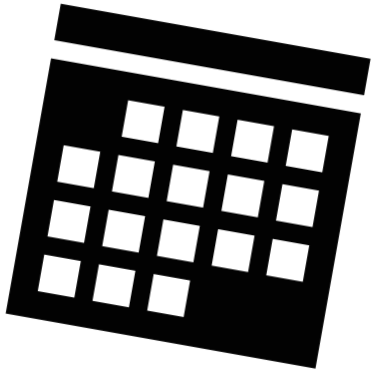
Considerations for facial hair



Source: NIOSH (https://www.cdc.gov/niosh/npptl/pdfs/facialhairwmask11282017-508.pdf)

When fit testing is needed

- Before a respirator is used
- Once a year
- Sooner if:
  - Changes in working conditions
  - Changes in respirator make, model, or size
  - An obvious change in body weight (e.g., weight loss or gain over 20 pounds)
  - Extensive dental work, scarring, or surgery



Source: NIOSH (https://blogs.cdc.gov/niosh-science-blog/2016/01/05/fit-testing/#:~:text=an%20acceptable%20fit.-,Conclusions,requirement%20for%20annual%20fit%20testing)

Before your fit test

You need respirator training

- To help you use your respirator correctly so that it protects you

You need a medical evaluation

- To help us know your body can tolerate the respirator

Source: OSHA (https://www.osha.gov/sites/default/files/publications/3384small-entity-for-respiratory-protection-standard-rev.pdf)

Medical Evaluation

[INSERT A DESCRIPTION AND/OR IMAGE OF YOUR ORGANIZATION'S PROTOCOL FOR MEDICAL EVALUATIONS]

Qualitative fit testing

Source: WisCon and Wisconsin State Laboratory of Hygiene (https://hhs.iowa.gov/hai-prevention/respiratory)

How is the respirator stored and maintained?

Storing your respirator

- Follow your manufacturer's instructions for proper care
- Protect respirators from dust, sunlight, extreme temperatures, excessive moisture, or damaging chemicals, fumes, or vapors
- [INSERT YOUR ORGANIZATION'S PROTOCOL AND STORAGE LOCATION]

Source: OSHA (https://www.osha.gov/sites/default/files/publications/3384small-entity-for-respiratory-protection-standard-rev.pdf)

Maintaining your respirator

- Clean your hands before touching the respirator
- Avoid touching the respirator while using it
- Wear gloves when inspecting and donning a reusable respirator
- Consider using a face shield over the respirator when additional protection is recommended
- Follow your facility's guidance and manufacturer's instructions for proper care

Primary Source: NIOSH (https://www.cdc.gov/niosh/docs/2015-117/pdfs/2015-117revised042022.pdf?id=10.26616/NIOSHPUB2015117)

How does improper use reduce the respirator’s abilities?

Misusing a respirator

Primary Source: OSHA (https://www.osha.gov/otm/section-8-ppe/chapter-2)

How is the respirator used in unexpected situations?

What to do in unexpected situations

- Leave the area
- Clean your hands
- Remove your respirator
- Inspect your respirator
- Decontaminate or exchange the respirator
- Inform [INSERT YOUR NAME?] or your supervisor about any malfunction with the equipment or possible health concerns

Primary Source: NIOSH (https://www.cdc.gov/niosh/docs/2015-117/pdfs/2015-117revised042022.pdf?id=10.26616/NIOSHPUB2015117)

What signs and symptoms may limit or prevent the effective use of respirators?

Recognize signs and symptoms

- Some medical conditions can affect a person's ability to tolerate a respirator
- Examples of symptoms:
  - Difficulty breathing
  - Shortness of breath
  - Dizziness
- Seek medical attention for any health concern you have

Primary Source: OSHA (https://www.osha.gov/otm/section-8-ppe/chapter-2)

Helpful terms

Term	Definition
Aerosol generating procedures	Procedures performed on patients that may be more likely to generate potentially infectious aerosols
Doff	A term commonly used with PPE, to take it off
Don	A term commonly used with PPE, to put it on
Exhalation valve	A valve on a respirator that does not filter the user's breath
Fit test	A way to test if the fit of the respirator is snug enough to protect you from respiratory hazards
Mask	A general face covering, it is not a respirator
Medical evaluation	An evaluation to determine if your body can tolerate using the respirator
N95	A respirator that fits tightly on the face to filter out 95% of airborne particulates in a non-oil environment
NIOSH	National Institute for Occupational Safety and Health - Federal research agency focused on worker health and safety
OSHA	Occupational Safety and Health Administration - Federal regulatory agency for worker health and safety
PPE	Personal Protective Equipment - gloves, gown, mask, respirator, safety glasses/goggles, face shield, etc.
Respirator	A device that removes contaminants from the air or supplies clean air from another source for you to breathe
Seal check	Checking the respirator's seal on your face when you first put it on and at any time you think the seal may have been broken

Summary

Key Takeaway 1

1. Respirators are devices that can protect you from breathing in harmful substances like _____, dusts, and chemicals.

Key Takeaway 1 - Answer

1. Respirators are devices that can protect you from breathing in harmful substances like **germs**, dusts, and chemicals.

Key Takeaway 2

2. Respirators are a type of _____ _____ _____ and may be required for some health care jobs as a part of their infection control practices.

Key Takeaway 2 - Answer

2. Respirators are a type of **personal protective equipment (PPE)** and may be required for some health care jobs as a part of their infection control practices.

Key Takeaway 3

3. All respirators used in health care should be approved by _____ and authorized by the ___ for use in health care.

Key Takeaway 3 - Answer

3. All respirators used in health care should be approved by **NIOSH** and authorized by the **FDA** for use in health care.

Key Takeaway 4

4. To use a respirator correctly, the user should do the following every time it is worn: inspect, don, ____ _____, and doff.

Key Takeaway 4 - Answer

4. To use a respirator correctly, the user should do the following every time it is worn: inspect, don, **seal check**, and doff.

Key Takeaway 5

5. ____ hygiene must be performed before and after donning and doffing.

Key Takeaway 5 - Answer

5. **Hand** hygiene must be performed before and after donning and doffing.

Key Takeaway 6

6. ___ _____ can be performed as a qualitative or quantitative test.

Key Takeaway 6 - Answer

6. Fit testing can be performed as a qualitative or quantitative test.

Key Takeaway 7

7. Some facial _____ can be worn with FFRs but others can’t because the respirator must seal tightly to the face to protect properly.

Key Takeaway 7 - Answer

7. Some facial **hairstyles** can be worn with FFRs but others can’t because the respirator must seal tightly to the face to protect properly.

Key Takeaway 8

6. Fit testing is needed before a respirator is used and _____, or more often if:
   - Changes in working _____
   - Changes in respirator make, _____, or size
   - An _____ change in body weight (e.g., weight loss or gain over 20 pounds)
   - Extensive _____ work, scarring, or surgery

Key Takeaway 8 - Answer

6. Fit testing is needed before a respirator is used and **yearly**, or more often if:
   - Changes in working **conditions**
   - Changes in respirator make, **model**, or size
   - An **obvious** change in body weight (e.g., weight loss or gain over 20 pounds)
   - Extensive **dental** work, scarring, or surgery

Key Takeaway 9

7. Before a fit test, respirator training and a _____ evaluation are needed.

Key Takeaway 9 - Answer

7. Before a fit test, respirator training and a **medical** evaluation are needed.

Key Takeaway 10

8. Each respirator should be used, seal checked, and cared for according to the _____ instructions.

Key Takeaway 10 - Answer

8. Each respirator should be used, seal checked, and cared for according to the **manufacturer's** instructions.

Key Takeaway 11

9. Misusing a respirator can result in difficulty _____, sickness, and death.

Key Takeaway 11 - Answer

9. Misusing a respirator can result in difficulty **breathing**, sickness, and death.

Key Takeaway 12

10. Some medical conditions can affect a person's ability to _____ a respirator.

Key Takeaway 12 - Answer

10. Some medical conditions can affect a person’s ability to **tolerate** a respirator.

Helpful resources

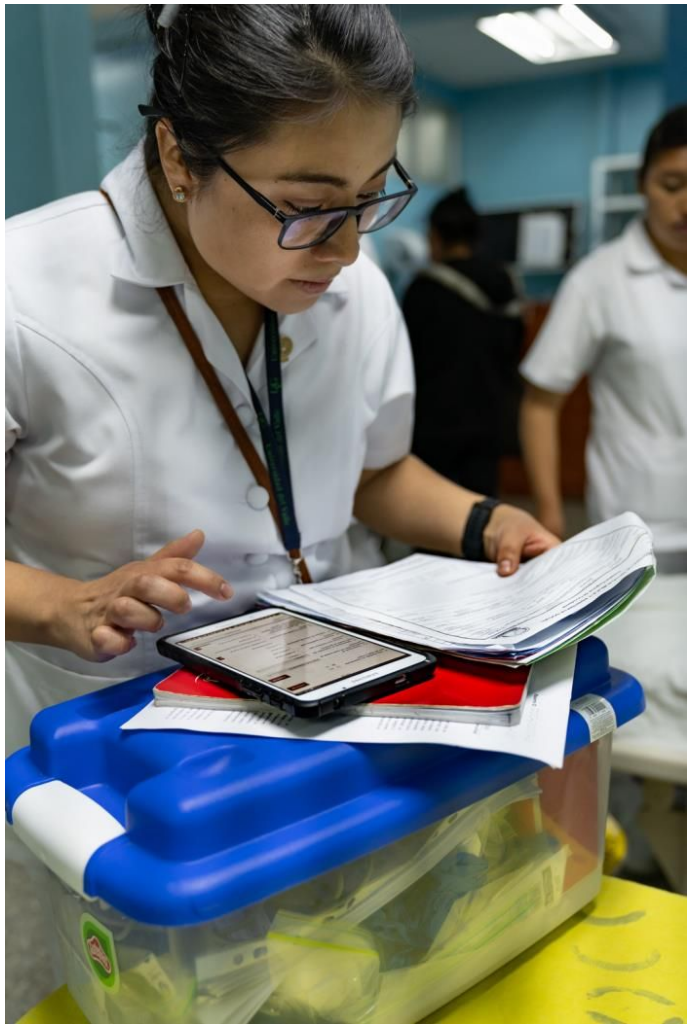
Iowa Department of Health and Human Services – Respirators and Fit Testing in Iowa

NIOSH-Approved N95s

NIOSH Fit Test FAQs

Project Firstline Videos

Thank you



Questions

Image Source: CDC (https://phil.cdc.gov/Details.aspx?pid=23870)

See you again soon!

- Respirator training and fit testing occurs every year
- Respirator training and fit testing should occur sooner if:
  - Changes in working conditions
  - Changes in respirator make, model, or size
  - An obvious change in body weight (e.g., weight loss or gain over 20 pounds)
  - Extensive dental work, scarring, or surgery
- Medical evaluations should occur again if:
  - Difficulty breathing or other issues while wearing a respirator
  - Changes in working conditions that may stress your body
  - Changes in health such as lung or heart problems

Acknowledgments

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