



March 25, 2020

## NC OSHERC COVID-19 Respiratory Protection Series: Session 1



GILLINGS SCHOOL OF  
GLOBAL PUBLIC HEALTH



March 25, 2020

# How to Properly Put on (Don) and Take off (Doff) a Disposable Respirator aka Filtering Facepiece Respirator SARS-CoV-2

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# Terminology

- Disposable Face Masks, Face Masks, Masks
  - Procedural masks
  - Surgical masks
  - acts to **contain** potentially infectious respiratory secretions at the source (i.e., the person's nose and mouth)
  - Some masks designed for fluid resistance also
- N95 Respirators
  - Most are filtering facepieces
  - Category of NIOSH approved particulate removing respirators
  - Acts as a barrier to aerosols when properly fitted
- No N95 masks - an oxymoron

# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

- A Filtering Facepiece (Disposable) Respirator is 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



- Filtering Facepiece Respirators are classified by NIOSH as:
  - N95, N99, N100
  - R95, R99, R100
  - P95, P99, P100

# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

- **All** Filtering Facepiece Respirators when properly worn and used will reduce the wearer's exposure to aerosols containing SARS-CoV-2.
- It is essential that the Filtering Facepiece Respirator be provided and worn in compliance with the OSHA Respirator Standard (29 CFR 1910.134)
- This includes: Respirator fit testing, medical evaluation of the employee and training that includes how to put on and take off the respirator



# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

Question: Are all Brands and Models of filtering facepiece respirators put on and taken off the same way?

- No, Different Brands and Models of filtering facepiece respirators may be put on and taken off differently.
- This can be true even with the same Manufacturer
- Each Respirator comes with Respirator SPECIFIC donning and doffing instructions

Therefore, always take the time to  
read the Manufacturer's instructions



# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

- Must have been initially fit tested with the same make, model and size that you are going to wear.
- Inspect the respirator for damage. If your respirator appears damaged, **DO NOT USE IT**. Replace it with a new one.
- Do not allow facial hair, hair, jewelry, glasses, clothing, or anything else to prevent proper placement or come between your face and the respirator.
- Follow the instructions that come with your respirator.
  - Manufacturer instructions for many NIOSH approved disposable respirators can be found at [https://www.cdc.gov/niosh/npptl/topics/respirators/disp\\_part/n95list1.html](https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/n95list1.html)





# NIOSH N95 Page

[https://www.cdc.gov/niosh/npptl/topics/respirators/disp\\_part/n95list1.html](https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/n95list1.html)

Index: 3M A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Notes

Supplier/Manufacturer and Contact Information	Model Number/Product Line	Approval Number	Valve Yes/No	Manufacturer's Donning Procedure User Instructions
<a href="#">3M Company</a> 888-3M HELPS or <a href="#">web form</a> ( <a href="#">Distribution Availability</a> )	1860 (FDA) 1860S (FDA)	84A-0006	No	<a href="#">1860, 1860S [PDF – 72 KB]</a>
<a href="#">3M Company</a> 888-3M HELPS or <a href="#">web form</a> ( <a href="#">Distribution availability for all products listed for 3M</a> )	8110S 8210 8210 Plus 8216 8217 7048	84A-0007	No	<a href="#">8210 [PDF – 103 KB]</a> <a href="#">8110S, 8210, 7048 [PDF – 187 KB]</a>



# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

- Again, donning and doffing filtering facepiece respirators are brand and model specific and manufacturer's instructions should be followed
- However, for most filtering facepiece respirators the proper placement of the head straps is: the top strap is on the crown of the head, above the ears and the bottom strap is around the neck, below the ears. If the respirator is equipped with a nosepiece it should be molded to the wear's face by pressing it with the index fingers of both hands

*Note: Pressing the nosepiece with the index finger and thumb of one hand (pinching) will cause the respirator to leak*





# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

- The following several slides will present *Generic* donning, seal check and doffing procedures for a filtering facepiece (disposable) respirator

The slides are taken from a NIOSH poster: “How to Properly Put on and Take off a Disposable Respirator”

<https://www.cdc.gov/niosh/docs/2010-133/pdfs/2010-133.pdf>

# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

Preparation: Good hand hygiene

- WASH YOUR HANDS THOROUGHLY BEFORE PUTTING ON AND TAKING OFF THE RESPIRATOR



## Putting on the Filtering Facepiece Respirator “Donning”



Position the Filtering Facepiece Respirator in your hand with the nose piece at your fingertips

# Putting on the Filtering Facepiece Respirator “Donning”



Cup the respirator in your hand allowing the straps to hang below your hand. Hold the respirator so the chin cup is below your chin and the nosepiece is at the bridge of your nose

Facial hair that interferes with face-to-facepiece seal causes the respirator to leak

## Putting on the Filtering Facepiece Respirator “Donning”



Take the top strap, bring it over your head and place it on the crown of your head, above the ears. Take care with ponytails and hair buns

Then take the bottom strap, bring it over your head and place it on your neck, below the ears

*Note: Do not crisscross straps. Crisscrossing straps will cause an improper fit of the respirator*

## Putting on the Filtering Facepiece Respirator “Donning”



If the filtering facepiece respirator is equipped with a nosepiece it should be molded to the wear's face by pressing it with the index fingers of both hands. Starting at the bridge of the nose and sliding the fingers down the nose. This shapes the nosepiece to your nose shape

*Again, Pressing the nosepiece with the index finger and thumb of one hand will likely cause the respirator to leak*

*Do not pinch*



# User Seal Checks

User Seal Checks must be done:

- According to the manufacturer's recommendations
- Remember good hand hygiene

Generic instructions to follow



# Checking Your Filtering Facepiece Respirator Seal “User Seal Checks”



*Negative Pressure Seal Check* is done by placing both hands over the respirator facepiece and then quickly inhaling to check if the respirator seals to your face

*Consult your user instructions*

# Checking Your Filtering Facepiece Respirator Seal “User Seal Checks”



*Positive Pressure Seal Check* is done by placing both hands over the respirator facepiece and then slowly exhaling. If you feel leakage around the facepiece, the respirator is not sealed properly

*Consult your user instructions*

# Checking Your Filtering Facepiece Respirator Seal “User Seal Checks”



If the respirator leaks try a combination of re-adjustments to obtain a proper respirator fit:

- Re-adjust the nosepiece
- Re-adjust the straps
- Move facepiece around on your face

# Checking Your Filtering Facepiece Respirator Seal

## “User Seal Checks”



If you cannot achieve a proper seal due to leakage, ask for help.  
If the respirator still does not fit, try a different size, model or  
brand of respirator



# Removing The Filtering Facepiece Respirator “Doffing”



**DO NOT TOUCH** the front of the respirator! It may be contaminated due to aerosol generating procedures

# Removing The Filtering Facepiece Respirator “Doffing”



Remove the respirator by first bringing the bottom strap over your head, then bringing the top strap over your head. This is done without touching the facepiece of the respirator

Wash hands!

# Removing The Filtering Facepiece Respirator “Doffing”



Discard the respirator according to the facility's infection control program procedures. Or if your facility has an extended use or re-use policy, store the respirator according to established procedures that will protect the respirator from damage (designated location, paper bag, wearer ID)

# DONNING AND DOFFING A FILTERING FACEPIECE RESPIRATOR

Finally: Good hand hygiene – Again!

- WASH YOUR HANDS THOROUGHLY BEFORE PUTTING ON AND TAKING OFF THE RESPIRATOR







# Extending N95 Supply

- Conventional Capacity Strategies
- Contingency Capacity Strategies
- Crisis Alternate Strategies

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html>



# Extended Use

- Extended use refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several patients, without removing the respirator between patient encounters.
- Patients are placed together in dedicated waiting rooms or hospital wards.

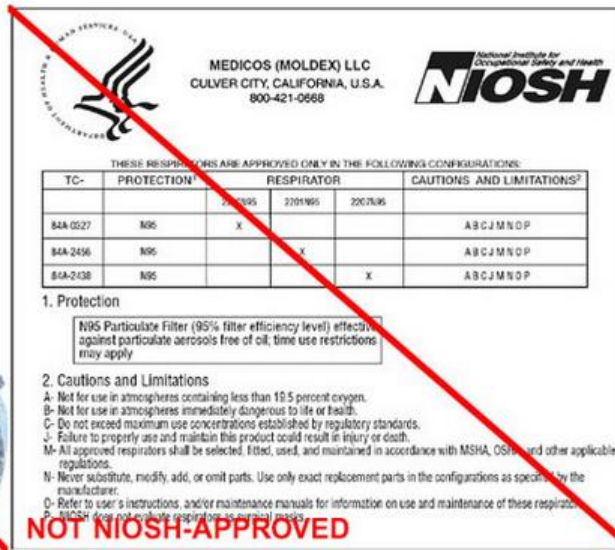
# Reuse (Limited Reuse)

- Reuse refers to the practice of using the same N95 respirator for multiple encounters with patients but removing it ('doffing') after each encounter.
- The respirator is stored in between encounters to be put on again ('donned') prior to the next encounter with a patient.
- For pathogens in which contact transmission (e.g., fomites) is not a concern.
- CDC recommends that a respirator classified as disposable can be reused by the same worker as long as it remains functional and is used in accordance with local infection control procedures.
- Even when N95 respirator reuse is practiced or recommended, restrictions are in place which limit the number of times the same FFR is reused. Thus, N95 respirator reuse is often referred to as "limited reuse".

# Counterfeit Respirators

- **NIOSH posts alerts when it becomes aware of counterfeit respirators or those misrepresenting NIOSH approval on the market**
- Always verify that the brand of respirator is listed in [NIOSH's list of manufacturers](#)
- The NIOSH publication 2013-138 “[Respirator Awareness: Your Health May Depend on It](#)”
- <https://www.cdc.gov/niosh/npptl/usernotices/counterfeitResp.html>

# Examples



This is an example of a counterfeit respirator. Medicos is selling an N95 respirator using the Moldex approval number and label without Moldex's permission. Medicos is not a NIOSH approval holder or private label holder. (3/12/2020) NIOSH website listed above.

# Thank You

Questions and Comments from today's session will be collected and responses posted on the OSHERC Website: [osherc.sph.unc.edu](http://osherc.sph.unc.edu)

Please contact [johnstaley@unc.edu](mailto:johnstaley@unc.edu) for questions about this presentation.

