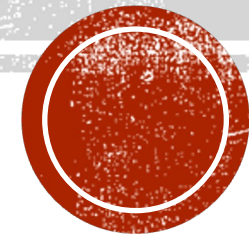


MASKING REFRESHER

Presented by New York Committee for Occupational Safety
and Health (NYCOSH)



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AGENDA

- Masks vs respirators
 - What is a mask?
 - What is a respirator?
 - What is the difference between N95s, KN95s, and KF94s?
- How effective are all these facepieces?
- How are they worn?



MASKS AND RESPIRATORS

Face shields are **NOT a form of respiratory protection; they provide protection from droplet splash **only**.

MASK VS RESPIRATOR

Masks (cloth, surgical/hospital)

- Loose fitting – no face seal
- Intended use: protection from wearer's respiratory emissions (eg, droplets)
- No filtration capabilities; not intended for airborne particulate

Respirators (N95s, KN95s*, KF94s*)

- Tight fitting – meant to form seal between facepiece edge and wearer's skin
 - This is why facial hair reduces effectiveness - disrupts the seal
- Intended use: protection against airborne particles, including small aerosols and large droplets (non-oil aerosols only)
- Filtering face piece – intended to filter out airborne particulate

Understanding the Difference



Surgical Mask



N95 Respirator

Testing and Approval

Cleared by the U.S. Food and Drug Administration (FDA)

Evaluated, tested, and approved by NIOSH as per the requirements in 42 CFR Part 84

Intended Use and Purpose

Fluid resistant and provides the wearer protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer's respiratory emissions.

Reduces wearer's exposure to particles including small particle aerosols and large droplets (only non-oil aerosols).

Face Seal Fit

Loose-fitting

Tight-fitting

Fit Testing Requirement

No

Yes

User Seal Check Requirement

No

Yes. Required each time the respirator is donned (put on)

Filtration

Does NOT provide the wearer with a reliable level of protection from inhaling smaller airborne particles and is not considered respiratory protection

Filters out at least 95% of airborne particles including large and small particles

Leakage

Leakage occurs around the edge of the mask when user inhales

When properly fitted and donned, minimal leakage occurs around edges of the respirator when user inhales







Use Limitations

Disposable. Discard after each patient encounter.

Ideally should be discarded after each patient encounter and after aerosol-generating procedures. It should also be discarded when it becomes damaged or deformed; no longer forms an effective seal to the face; becomes wet or visibly dirty; breathing becomes difficult; or if it becomes contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.



Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

MASK	USE	DESCRIPTION	USUAL COST	WHO NEEDS FOR COVID-19
Homemade mask (reusable if washed) 	Recommended for everyone in the US by the CDC, for use in public places, like grocery stores.	Homemade masks can be sewn, cut, or fashioned from a bandana and coffee filter, per the CDC. The masks should be washed routinely.	Low cost	People in crowded places where it's difficult to maintain 6 feet of distance between yourself and others.
Surgical mask (disposable) 	Surgeons (mainly, so they don't get germs on their patients)	Can help protect wearers from getting others sick through their spit. Doesn't protect healthy people from acquiring an illness, and a loose fit leaves room for error.	\$0.25	Sick people (to avoid infecting others), and caretakers
N95 respirator (disposable) 	Working with dust, mold, or medical/ environmental emergencies. Only protects against particles, not gases or vapors.	Can help protect healthcare workers from germs by blocking out at least 95% of small airborne particles — if worn correctly	\$2–\$4	Healthcare workers
P100 respirator/ gas mask (reusable) 	Painting/ woodworking, exposure to lead, asbestos, solvents and chemicals.	Protects manual laborers from exposure to lead, asbestos, solvents, and other dangerous chemicals on the job.	\$25–\$50	Effective for all, but unnecessary
Full face respirator/ Powered air-purifying respirator (reusable) 	Painting or scenarios where a person needs protection from gases and vapors. Protects the eyes.	Protects people from gases and vapors. Can be a better fit for people with breathing problems or robust facial hair.	Prices vary. Start around \$115 for basic models.	Could be for people who have a hard time breathing in a regular mask, as some are powered with an air supply.
Self-contained breathing apparatus (reusable) 	Firefighters	Protects people like firefighters who need clean air in dangerously polluted situations.	\$2,500–\$4,000	No one

Sources: JAMA; FDA; OSHA, CDC

BUSINESS INSIDER

N95, KN95, KF94, ???

- What does the N95 mean?
 - The 95 means that the facepiece filters at least 95% of airborne particles.
 - The N indicates that the facepiece is not resistant to oil.
- N95s are tight-fitting respirators with two **straps that go around the head** (one below the ears, one above).
 - These respirators are approved by National Institute for Occupational Safety and Health (NIOSH). A respirator can only be called an N95 if it adheres to NIOSH standards.
- KN95s are respirators that are made in accordance to China's standards for facepiece respirators. KF94s are made to South Korea's standards.
 - Neither KN95s nor KF94s are NIOSH approved – NIOSH does not approve or certify products certified to international standards.¹
 - Both KN95s and KF94s have straps that go **behind the ears**. This is not as tight a seal as straps that go around the head.



EFFECTIVENESS



MASK PROTECTION EFFICIENCY

<https://guardiamedical.com/blogs/news/mask-protection-efficiency-infographic>








PREPARE FOR BATTLE.

in f t i @guardiamedical

This photo is a little misleading because it doesn't address the difference in fit between a K95 and a surgical mask.

The material of the facepiece of both is highly protective, but the fit makes a huge difference on the effective efficiency.

	Type of Covering	Fitted Filtration Efficiency
	Fit Test NIOSH N95 Respirator	>95%
	NIOSH N95 Respirator	>95%
	International Respirators (e.g. KN95, KF94)	>94%
	Workplace Performance Plus*	>90%
	Loose Surgical Mask	>44%
	Three Layer Cloth Mask	>33%
	One Layer Cloth Mask	>30%
	Gaiters/ silk masks/ mesh	Not recommended

THE ACTUAL FIT EFFECTIVENESS IS CLOSER TO THIS

Source: Image adapted from Insider.com, n.d.

Data source: MedRxiv 2021 and CDC 2021

List of WP+ masks can be found [here](https://www.cdc.gov/PPEInfo/RG/FaceCoverings):
www.cdc.gov/PPEInfo/RG/FaceCoverings



HOW TO USE A MASK OR A RESPIRATOR

DONNING AND DOFFING

- Donning (putting on)
 - Wash your hands
 - Handle the facepiece as little as possible
 - Put on the facepiece first, then adjust the straps, then the nosebridge
- Doffing (taking off)
 - Remove by the straps and the edges
 - Handle the facepiece as little as possible
 - Wash your hands
- [Demo]

EATING, DRINKING, ETC.

- We all need to eat, drink, and take breaks during the day. This is unavoidable.
- However, we should understand that any time we remove a protective layer, we increase risk.
 - The level of risk increase depends on the duration (how long the layer is off), what we are doing while it's removed (eg, eating, singing), and our surroundings (alone vs room full of people).
 - This is why a combination of protective measures is key (think Swiss cheese model) (eg, ventilation, reduced occupancy).

