

COVID-19: Workers Need Respirators

ANYONE CAN BE A SOURCE. ANYONE CAN BE A RECEIVER.

With a N95 filtering facepiece respirator (FFR)...

...he has 1-10% inward leakage and outward leakage.
Workers need a fit-tested* respirator to prevent inhalation of infectious particles. Better respirators with higher protection factors should be used for high particle concentrations.

With a surgical mask...

...he has 50% inward leakage and outward leakage
A surgical mask may be appropriate for patients to wear as source control. It does not provide adequate protection for workers from inhalable infectious particles.

With a cloth face covering (Cloth FC)...

...he has 75% inward leakage and outward leakage.
A cloth face covering may be appropriate for the public to wear as source control, but they should limit proximity to others and time spent in an indoor space.

*N95 FFRs have an assigned protection factor of 10 (10% inward leakage) but must receive a fit factor of 100 (1% inward leakage) on an individual worker.

A face covering gives minutes. A respirator gives hours.

According to CDC, an uninfected person with no face covering can be infected if within 6 feet of an infected person for 15 minutes. The time increases to 27 minutes if both are wearing a cloth FC, and to 2,500 hours if both are wearing a fit-tested N95 FFR. The table below indicates time to infection for other combinations.

Time to Infectious Dose for Someone Not Infected with COVID-19		RECEIVER IS WEARING				
SOURCE IS WEARING		Nothing	Cloth FC	Surgical Mask	N95 FFR (10%)	N95 FFR (1%)
	Nothing	15 MIN	20 MIN	30 MIN	2.5 HR	25 HR
	Cloth FC	20 MIN	27 MIN	40 MIN	3.3 HR	33 HR
	Surgical Mask	30 MIN	40 MIN	60 MIN	5 HR	50 HR
	N95 FFR (10%)	2.5 HR	3.3 HR	5 HR	25 HR	250 HR
	N95 FFR (1%)	25 HR	33 HR	50 HR	250 HR	2,500 HR

Inward leakage = Percentage of particles entering the facepiece to be inhaled by a receiver
Outward leakage = Percentage of particles exhaled by a source exiting the facepiece



WARNING: If respirators are required for other workplace hazards, do not stop their use. Treat COVID-19 as a new hazard that may require additional protection.

For more fact sheets and resources, use this QR code to access the ACGIH website:

