

Update to CDC guidance on "Decontamination and Reuse of Filtering Facepiece Respirators" which highlights UV as a strong contender for disinfecting N95s.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html> - last reviewed April 9, 2020).

Key highlights (please read the whole study for pertinent details.):

- > Focused on surface contamination issues (infers this is the main problem to be addressed in reuse decon).
- > NPPTL (NIOSH's National Personal Protective Technology Laboratory) investigated the impacts of several decon methods and made these conclusions:
 - "ultraviolet germicidal irradiation (UVGI), vaporous hydrogen peroxide (VHP), and moist heat showed the most promise as potential methods to decontaminate FFRs"
 - Table 3 showed UV antimicrobial efficacy of 3-log₁₀ @ 0.5-1.8J/cm²;
 - = for comparison, Battelle's VHP showed 5-log₁₀, however required a cycle time of 6 hours (480 minutes).
- > NPPTL testing also found
 - "Acceptable filtration performance was recorded for eleven FFR models exposed to various UV doses ranging from roughly 0.5–950 J/cm² and UVGI was shown to have minimal effect on fit"
 - "... performance of 1 J/cm² of UVGI against Influenza A (H1N1), Avian influenza A virus (H5N1), Influenza A (H7N9) A/Anhui/1/2013, Influenza A (H7N9) A/Shanghai/1/2013, MERS-CoV, and SARS-CoV and reported virus inactivation from 99.9% to greater than 99.999%"
 - "Decontamination using an autoclave, 160°C dry heat, 70% isopropyl alcohol, microwave irradiation and soap and water caused significant filter degradation..."
 - UVGI was tested on 22 FFRs, vs 10 for VHP (see Table 4, extract shown below)
 - = no test fails noted, so all may be assumed successful?
 - See attached file for specifics.

All that said, there are no FDA Emergency Use Authorizations (EUAs) on file for UVGI disinfection of N95s as of 9 April.

The ONLY EUA is for the Battelle VHP system, and then only when operated by Battelle personnel.

<https://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations#covid19ppe>