



### Optional N-95 Decontamination Method

An optional decontamination of N-95 masks with the use of UV-C light is being used in many hospitals nationwide, but the process/equipment is not practical for EMS. With the help of a lab in Pennsylvania, this method was created/tested with first responders in mind. **Best practice is to use new N95's. Decontamination does not solve the PPE shortage crisis, and is an emergency practice to be considered during the COVID-19 pandemic. Efficacy and safety of N95 decontamination has not been fully characterized.** This method uses a UV-C Germicidal Cabinet. These cabinets are often found in high school agricultural or science classes for sanitization of goggles. Numerous agencies have reached out to high schools and borrowed the cabinets for the purpose of N-95 decontamination.

Ultraviolet germicidal radiation can inactivate viruses such as MERS and SARS on N95 masks and other surfaces. Two factors are critical when using this radiation. The UV wavelength needs to be at 254 nm which is in the UV-C region of the spectrum and secondly, the UV dose must be at 1 joule/cm<sup>2</sup> or greater. There can be shadowing effects as with any light source and thus it is recommended that the masks be illuminated on both sides. The straps were not effectively decontaminated using this technique and thus it is recommended that after every illumination, the straps are wiped down with a sanitizer such as isopropyl alcohol in water. The dose delivered is critical and therefore it is highly recommended that a radiometer or sensor strips (254 nm) are used to verify the dose during the treatment period. The time periods vary depending on the light wattage but in general are at 60 minutes or less. Precautions must be taken by the user by wearing protective equipment such as a UV safety goggles, UV face shields and long-sleeved clothing with gloves. UV-C radiation is harmful to the eyes and skin.

You would need a light meter or test strips to ensure that your light wattage is correct. Light meters can be purchased or rented, but the test strips are the most economical route. Place your masks on a shelf in the cabinet for most likely a very short time like 10 minutes or less, turn them over and do it again for 10 minutes. Do the final calculations on the time, depending on what the meter/strips states. Let the masks set for about 10 minutes. You should wear protective gear such as a UV face shield, goggles and clothing that would cover your arms and gloves to cover your hands. The straps should be wiped off with a sanitizer after being sanitized in the cabinet. The masks can be used for 10 to 20 cycle periods.

**Disclaimer:** The PPE Committee is made up of providers from our region who have generously agreed to lead research on best practices, as we find ourselves in the unprecedented situation of needing to reuse disposable personal protective equipment. These documents represent their best efforts to identify safe practices for reuse of N95 masks. As always, we are grateful for their work, and acknowledge that use of this information is provided for use at the individual's own risk, with no liability or personal responsibility implied on the part of the committee members or BREMS Council.

\*UV-C Cabinet & Test Strip vendor information is listed on the PPE Equipment List