N95 RE-USE INSTRUCTIONS

March 27, 2020 by Viola Huang (https://www.sages.org/author/viola-huang/)

Please see the image at the end of this post for the original email correspondence.
The following is intended to provide our members with additional information to help manage surgical patients during the COVID-19 pandemic. These are not formal guidelines and due to time constraints, SAGES has not reviewed them by utilizing its standard rigorous guidelines process. Statements and information are updated regularly and subject to change as more data becomes available.

ATTENTION NURSES, DOCTORS, FIRST RESPONDERS, HEALTHCARE PROVIDERS, AND ANYONE REUSING AN N95 MASK OR MAKING ONE:

I contacted Dr. Peter Tsai, the INVENTOR of the filtration fabric in the N95 mask. N95 masks are made of polypropylene material and are designed to tightly fit over your face with little leakage around the edge of the mask. I asked Dr. Tsai about reusing the N95 respirator, and what materials could be added in homemade masks to make them more effective. He responded with the following:

MASK REUSE METHOD #1

When reusing N95 masks, leave a used respirator in dry, atmosphere air for 3-4 days to dry it out. Polypropylene in N95 masks is hydrophobic and contains zero moisture. COVID-19 needs a host to survive–it can survive on a metal surface for up to 48 hours, on plastic for 72

- Take four N95 masks, and number them (#1-4).
- On day 1, use mask #1, then let it dry it out for 3-4 days.
- On day 2, use mask #2, then let it dry out for 3-4 days.
- Same for day 3, and day 4…

MASK REUSE METHOD #2

You can also sterilize the N95 mask by hanging it in the oven (without contacting metal) at 70C (158F) for 30 minutes-it is reported that COVID-19 cannot survive at 65C (149F) for 30 minutes.
Use a wood clip to hang the respirator in the kitchen oven to do the sterilization.
When sterilizing N95 masks, be wary of using UV light–keep N95 masks away from UV light / sunlight. N95 masks are degraded by UV light because it damages the electrostatic charges in the polypropylene material. It is unclear how long the masks can be exposed to UV light before they are ineffective.

TIPS FOR REUSE METHOD #1 AND METHOD #2

DO NOT place the respirator on a metal surface, or too close to metal–the temperature on the metal surface is higher than the air temperature.
Keep N95 masks away from UV light / sunlight.
When removing the mask, hold the edge of the straps attached to take off the N95 mask. Your hands may be contaminated at this time–don't touch the inside part of the respirator. Wash your hands with soap for 20 seconds afterward.

HOMEMADE MASKS

It is not a good idea to use cotton masks when taking care of infected patients. The

millions of microfibers layered on top of each other that have been permanently electrostatically charged. An electrical field ionizes the air and forces the ions deep into the microfibers which allows the polypropylene to act as a filter.

However, using a HEPA filter with a face mask might increase its effectiveness, but it may make it harder to breathe. If you place another media over a face mask, the resistance to breathing increases-it is the sum of the two together. When adding an extra layer, make sure it perfectly covers the whole mask. Keep in mind it may make it more difficult to breathe.

More ▽

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MASK REUSE METHOD #1

When reusing N95 masks, leave a used respirator in dry, atmosphere air for 3-4 days to dry it out. Polypropylene in N95 masks is hydrophobic, and contains zero moisture. COVID-19 needs a host to survive--it can survive on a metal surface for up to 48 hours, on plastic for 72 hours, and on cardboard for 24 hours. When the respirator is dry in 3-4 days, the virus will not have survived.

Take four N95 masks, and number them (#1-4).
On day 1, use mask #1, then let it dry it out for 3-4 days.
On day 2, use mask #2, then let it dry out for 3-4 days.
Same for day 3, and day 4...

MASK REUSE METHOD #2

You can also sterilize the N95 mask by hanging it in the oven (without contacting metal) at 70C (158F) for 30 minutes—it is reported that COVID-19 cannot survive at 65C (149F) for 30 minutes.

Use a wood clip to hang the respirator in the kitchen oven to do the sterilization.

(https://i0.wp.com/www.sages.org/wp-content/uploads/2020/03/reuse-n95.png?ssl=1)

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