Low-cost moist heat treatment of N95 masks eliminates SARS-CoV-2, bacteria

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A new study shows that moist heat treatment of N95 masks eliminates severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and bacteria, which would allow reuse of these scarce resources. The study is published in *CMAJ* (*Canadian Medical Association Journal*).

The researchers found that moist heat treatment (60 min, 70°C, 50% relative humidity) did not damage the mask's structure or affect function.

"This low-cost reprocessing strategy can be applied 10 times without affecting the mask's filtration, breathing resistance, fit and comfort, and thus may help to alleviate the global shortage during the COVID-19 pandemic," says Dr. Gregory Borschel, Institute of Biomaterials and Biomedical Engineering and Division of Plastic and Reconstructive Surgery, The Hospital for Sick Children (SickKids), Toronto, Ontario.

Researchers tested 4 common models of N95 masks at various temperatures and humidity levels to determine whether the virus could be detected on the treated masks. They also analyzed fiber samples for structural integrity and assessed function of the masks after treatment with heat.

"Thermal disinfection of N95 masks may provide a low-cost, effective method for regions with fewer resources to extend their supply of these critical resources, thereby protecting vulnerable front-line workers from job-related risk of infection," says Dr. Borschel.

More information: Simeon C. Daeschler et al. Effect of moist heat reprocessing of N95 respirators on SARS-CoV-2 inactivation and respirator function, *Canadian Medical Association Journal* (2020). DOI: 10.1503/cmaj.201203

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